

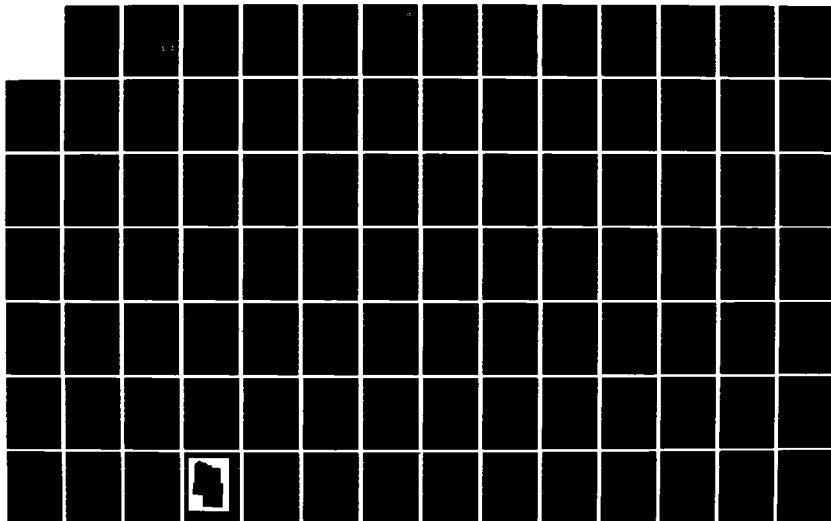
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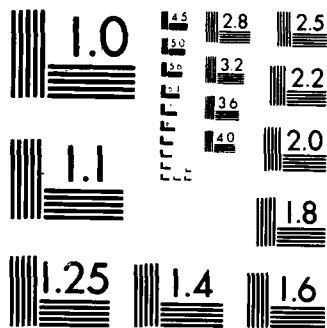
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REGIONAL ECONOMIC ANALYSIS

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## ERRATA

Except for those in the last three lines of the table, the values appearing in all tables entitled "Personal Income by Major Sources and Total Labor and Proprietors Income by Type and Industry" are in thousands of current-year dollars. The values in the last three lines in these tables are in units indicated for them.

The incorrectly labeled tables to which this errata sheet applies are:

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# REGIONAL ECONOMIC ANALYSIS

Prepared for  
 United States Air Force  
 Ballistic Missile Office  
 Norton Air Force Base, California

By  
 Henningson, Durham & Richardson, Inc.  
 Santa Barbara, California  
 REVIEW COPY OF WORK IN PROGRESS  
 2 October 1981

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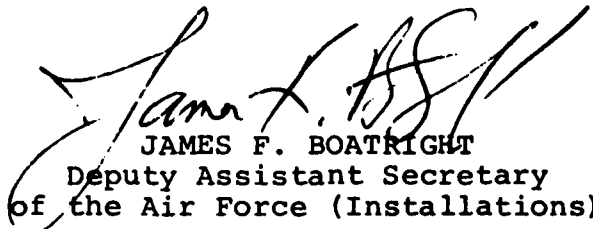
Federal, State and Local Agencies

On October 2, 1981, the President announced his decision to complete production of the M-X missile, but cancelled the M-X Multiple Protective Shelter (MPS) basing system. The Air Force was, at the time of these decisions, working to prepare a Final Environmental Impact Statement (FEIS) for the MPS site selection process. These efforts have been terminated and the Air Force no longer intends to file a FEIS for the MPS system. However, the attached preliminary FEIS captures the environmental data and analysis in the document that was nearing completion when the President decided to deploy the system in a different manner.

The preliminary FEIS and associated technical reports represent an intensive effort at resource planning and development that may be of significant value to state and local agencies involved in future planning efforts in the study area. Therefore, in response to requests for environmental technical data from the Congress, federal agencies and the states involved, we have published limited copies of the document for their use. Other interested parties may obtain copies by contacting:

National Technical Information Service  
United States Department of Commerce  
5285 Port Royal Road  
Springfield, Virginia 22161  
Telephone: (703) 487-4650

Sincerely,

  
JAMES F. BOATRIGHT  
Deputy Assistant Secretary  
of the Air Force (Installations)

1 Attachment  
Preliminary FEIS

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## 1.0 INTRODUCTION

This report (ETR-44) provides additional detail to information presented in the FEIS for employment, labor force, and earnings in the project area. Information provided in this document that is supplemental to the FEIS includes:

- o detailed analysis of baseline employment, labor force, and earnings;
- o a study of the baseline and projected employment and earnings in the western region, with and without M-X;
- o detailed analysis of M-X and other projects, employment, labor force, and earnings effects in the specific Area of Analysis (AOA) counties; and
- o study of the anticipated wage escalation effects due to M-X deployment.

*Discussion of the M-X results, which, for the  
western region, Mexico, and employment, projections,  
income.*

## 2.0 BASELINE ENVIRONMENT

### 2.1 EMPLOYMENT AND LABOR FORCE

#### NEVADA/UTAH REGION OF INFLUENCE (2.1.1)

##### Introduction (2.1.1.1)

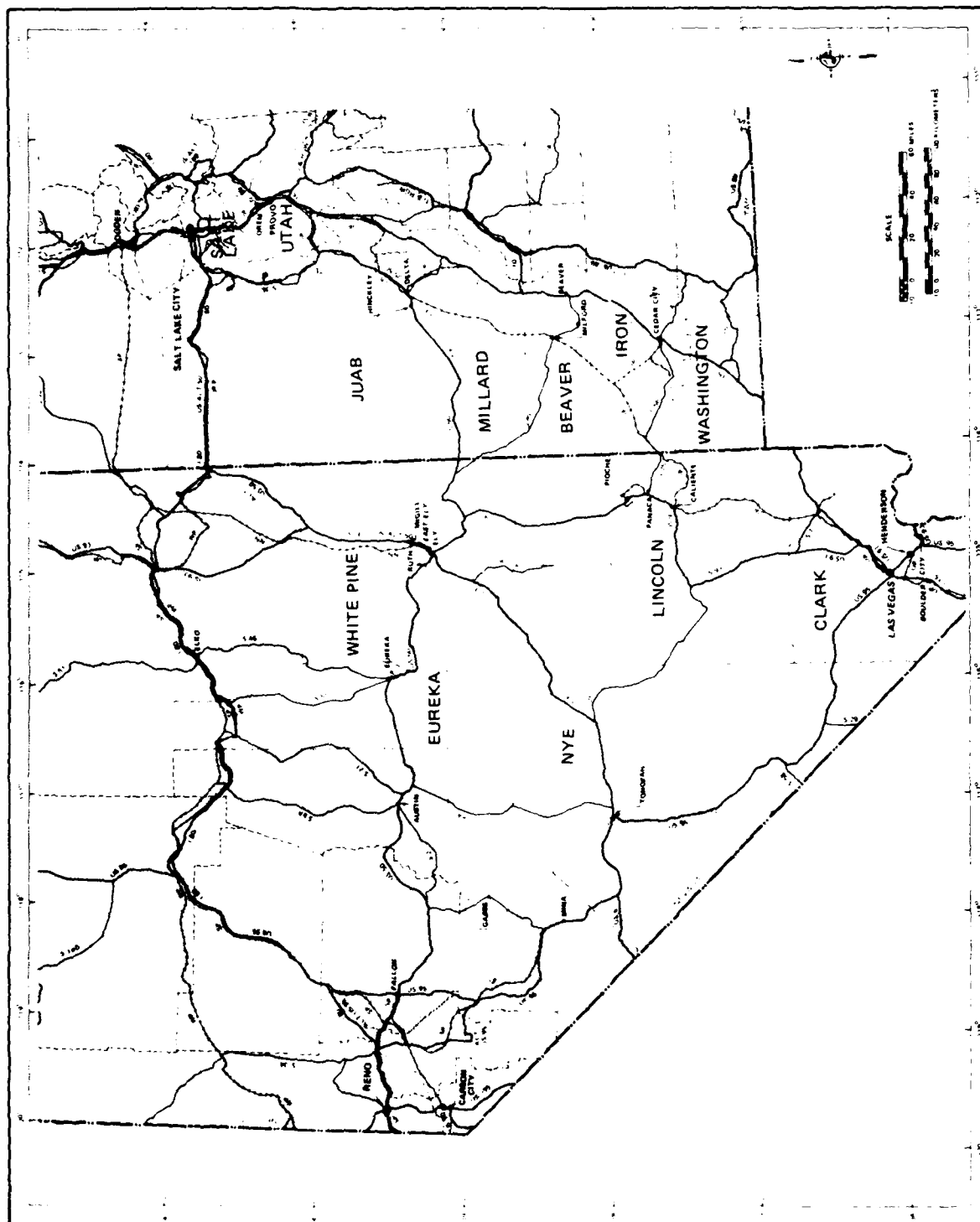
On the basis of a number of geotechnical and cultural criteria and on military and operational suitability, two areas have been identified for M-X deployment. These are Nevada/Utah and Texas/New Mexico. This section deals with the Nevada/Utah region, which covers a large portion of central and eastern Nevada and western Utah. The primary study area for socioeconomic analysis, called the region of influence (ROI), is shown in Figure 2.1.1.1-1. It includes the Nevada counties of Clark, Eureka, Lincoln, Nye, and White Pine and the Utah counties of Beaver, Iron, Juab, Millard, Salt Lake, Utah, and Washington. Potential base sites are located in the vicinities of Coyote Spring and Ely in Nevada and Beryl, Delta and Milford in Utah. Proposed construction camp sites are distributed across most of the counties in the ROI.

The Nevada Territory was established in 1861 from a portion of the Utah Territory. Mining and railroad construction were prime movers in the Nevada economy from this time until after World War II. Boom towns were created as people in-migrated to mining districts. Many of the migrants were recruited by the rapidly expanding railroad companies to lay track and build way stations. Expansion of the railroad system enhanced the regions accessibility. As a result, the agriculture and services sectors grew to provide the needs of the expanding population. More recently, the gaming industry has outpaced other industries in the state. It is currently the basis for the state economic growth.

Economic development in Utah began in the mid-19th Century. Early development followed an organized pattern based on Mormon religious concepts. Once the Mormons had established Salt Lake City as their religious center, Brigham Young sent them south to establish many agricultural communities. Water determined the location and size of the settlements, which were established approximately a wagon-trip day apart. Prior to Brigham Young's death in 1877, about 350 such settlements were founded. This colonization spread over thousands of square miles from the Rocky Mountains to the Pacific and from Canada to Mexico.

Brigham Young's efforts to establish a Mormon County were tempered by federal action and other external events. Federal action in 1861 established the Nevada Territory and the Colorado Territory and reduced the Utah Territory to about half its original size. Additional western portions of the Utah Territory were removed in treaties of 1862 and 1866. The final reduction was in 1886, when a segment was taken from the northwestern corner to form the Wyoming Territory.

Completion of the Transcontinental Railroad in 1869 reduced Mormon isolationism. Non-Mormon merchants and miners began to move in and prosper. Railroads also opened up new markets for agricultural products in south-central Utah. Mining was the next phase in economic development of the area. In the late



SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER STATE AND FEDERAL AGENCIES. 1918-C-2 1040-C

Figure 2.1.1.1-1. Nevada/Utah region of influence (ROI).



19th Century, rich deposits of precious metals were found which induced rapid growth, and then decline, as the mining boom ran its course.

The economy of central Utah had declined during the fifty years prior to 1970. But since then, increased activity in mining, transportation, and energy development has spurred economic growth in the area.

#### **Recent Labor Force Trends (2.1.1.2)**

##### Nevada (2.1.1.2.1)

The size of the employed and the unemployed labor force and the unemployment rate are useful measures of the study area economy, since they indicate the labor supply from which project-generated direct and indirect job demands can be filled. As shown in Table 2.1.1.2-1, the Nevada ROI had a total labor force of 215,000 persons in 1980. Most of this labor force--208,000 persons--was located in Clark County, and represented 55 percent of the labor force of the entire state of Nevada. The other four counties in the Nevada ROI had a combined labor force of less than 7,500 persons in 1980, about 2 percent of the state total. The remaining portion of Nevada's labor force is located outside the Nevada ROI, mostly in the tourism centers of Reno and Tahoe South Shore and in Carson City, the state capital.

Tables presented in the baseline employment sections of ETR's 2A-2L detail population, labor force, employment, unemployment, and unemployment rate fluctuations between 1968 and 1980 in Clark, Eureka, Lincoln, Nye, and White Pine counties. The Clark County labor force has more than doubled since 1968 and increased by 33 percent between 1975 and 1980. A major decrease in the White Pine County labor force occurred between 1975 and 1979 following the closure of large copper operations of the Kennecott Copper Corporation. Approximately 1,000 jobs were eliminated.

Employment levels increased between 1975 and 1980 in each of the ROI counties except White Pine. The number of employed persons in the five-county Nevada ROI was just over 200,000 in 1980, 96 percent of whom resided in Clark County.

The bulk of the unemployed were also located in Clark County, which had a slightly higher unemployment rate than that of Nevada as a whole. Unemployment rose sharply in 1975 to 16,600 persons. The unemployment rate reached 10.6 percent. Unemployment eased slightly during the next two years, and then dropped more than 3 percentage points in 1978 to 4.9 percent. In 1980, the number of unemployed rose sharply to 14,800, 7.1 percent of the labor force.

Unemployment rates in Eureka, Lincoln, and Nye counties have remained relatively low between 1975 and 1980, all averaging less than 5.5 percent. Unemployment in White Pine County, however, averaged 12.2 percent between 1975 and 1980, due to copper mining plant closures. In 1976, 950 people, comprising 23.5 percent of the county's labor force, were unemployed. By 1977, only 370 people, or 9.6 percent of the labor force, were unemployed, because many of the workers that were laid off either found other jobs or left the county.

Table 2.1.1.2-1. Nevada civilian labor force, employment, unemployment, and unemployment rate, by place of residence, 1980.

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Clark	208,000	193,200	14,800	7.1
Eureka	600	570	30	5.0
Lincoln	1,570	1,520	50	3.2
Nye	2,100	2,020	80	3.8
White Pine	3,140	2,900	240	7.6
Nevada ROI	215,410	200,210	15,200	7.1
Rest of State	160,590	152,390	7,800	4.9
State Total	376,000	352,600	23,000	6.2
United States	104,719,000	97,270,000	7,448,000	7.1

T5518/8-20-81

Sources: For Nevada data, Nevada Employment Security Department, 1981; for U.S. data, Council of Economic Advisors, Economic Report of the President, 1981.

Unemployment rates in Clark and Lincoln counties through the first five months of 1981 increased over 1980 average levels--to 8.0 percent from 7.1 percent in Clark County, and to 3.8 percent from 3.2 percent in Lincoln County. Eureka, Nye, and White Pine counties experienced declines in unemployment rates through the first five months of 1981--in Eureka, from 5.0 to 2.4 percent, in Nye, from 3.8 to 3.5 percent, and in White Pine, from 7.6 to 6.9 percent (Nevada Employment Security Department, no date). Declining unemployment in each of these three counties was accompanied by significant increases in the size of the labor force over 1980 levels. Eureka County's small labor force increased 3.9 percent through May 1981. The labor force in Nye County increased 7.6 percent, and in White Pine County it increased 8.0 percent.

The unemployed labor force is only a rough indicator of labor force availability. In particular, rapid employment growth is likely to induce in-migration of workers before the resident labor force is fully employed. At the same time, baseline unemployment would understate the local labor supply in cases where people are employed part-time but would prefer full-time employment, or when people not in the labor force might join it if suitable jobs became available. For the specific labor supply assumptions used in this analysis, see ETR-27. However, for the rural Nevada counties, population totals are so small that no increase in resident labor force participation could meet projected M-X-induced demand.

#### Utah (2.1.1.2.2)

Table 2.1.1.2-2 indicates that Salt Lake County's 286,000 workers comprised a large share--46 percent--of the Utah labor force in 1980. An additional 13 percent were located in Utah County and the five remaining Utah ROI counties combined to represent 4 percent of the state total. The remaining 37 percent of the Utah labor force lived outside the ROI, mostly in Weber and Davis counties.

The baseline employment sections in ETR's-2A-2L include tables presenting population, labor force, employment, unemployment, and unemployment rate fluctuations between 1968 and 1980 for Beaver, Iron, Juab, Millard, Salt Lake and Utah, and Washington counties.

Between 1968 and 1980, all Utah ROI counties except Beaver County have experienced an increase in the size of their resident labor forces. The most significant labor force increase occurred in Salt Lake and Utah counties. The labor force increased by 147,700, or 67.3 percent, over the 13-year period. This constitutes average annual growth of 4.4 percent. The combined labor force of the two counties, however, declined slightly between 1979 and 1980, the only decrease since 1968. Among the non-metropolitan counties, labor force growth was particularly rapid in Washington and Iron counties, at 6.1 and 4.0 percent per year, respectively. In Millard and Juab counties the labor force grew more slowly, at an average of 2.4 percent and 1.9 percent, respectively.

Employment of the labor force similarly increased from 1968 to 1980 in all of the ROI counties except Beaver County. The most significant increase was in Salt Lake and Utah counties.

Employment on a labor-force basis in Salt Lake and Utah counties declined by 1.3 percent from 1979 to 1980. Unemployment rose to 5.2 percent of the labor

Table 2.1.1.2-2. Utah civilian labor force, employment, unemployment, and unemployment rate, by place of residence, 1980.

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Beaver	1,806	1,711	95	5.3
Iron	7,499	6,996	503	6.7
Juab	2,203	2,042	161	7.3
Millard	3,635	3,470	165	4.5
Salt Lake	286,252	271,706	14,546	5.1
Utah	81,102	76,708	4,394	5.4
Washington	9,062	8,593	469	5.2
Utah ROI	391,559	371,226	20,333	5.2
Rest of State	230,749	217,551	13,198	5.7
State Total	622,308	588,777	33,531	5.4
United States	104,719,000	97,270,000	7,448,000	7.1

T5519/8-20-81

Sources: For Utah data, Utah Department of Employment Security, 1981; for U.S. data, Council of Economic Advisors, Economic Report of the President, 1981.

force, the highest level since 1977, but still lower than during most of the 1970s. The absolute number of unemployed persons reached 18,900 in 1980, the highest since 1975, when nearly 20,900 were out of work in the two counties. The Salt Lake and Utah County unemployment rate of 5.2 percent was still well below the U.S. jobless rate of 7.1 percent in 1980. All of the counties in the Utah ROI averaged between 5.0 and 7.0 percent unemployment during the 1975 to 1980 period, generally lower than the 1975-80 national average of 7.0 percent. Only Juab County in the Utah ROI experienced average unemployment conditions as high as the recent national average.

Through the first half of 1981, seasonally adjusted six-month average unemployment rates in the state as a whole and in most of the Utah ROI counties exceeded the 1980 annual average levels shown in Table 2.1.1.2-2 (Utah Department of Employment Security, no date). Unemployment increased to 5.8 and 5.5 percent from 5.1 and 5.4 percent in Salt Lake and Utah counties, respectively. Beaver County's unemployment rate had increased to 5.7 percent, while unemployment rose in Iron County to 6.9 percent and in Washington County to 5.7 percent. Only Juab and Millard counties in the Utah ROI experienced unemployment below 1980 average levels, with declines to 6.1 and 2.9 percent, respectively. State-level unemployment rose to 5.8 percent in the second quarter, largely as a result of continued weak performance of the U.S. economy, as evidenced by a preliminary estimate of a 1.9 percent decline in real gross national product in the second quarter of 1981 (U.S. Department of Commerce, 1981).

### **Sectoral Employment Trends (2.1.1.3)**

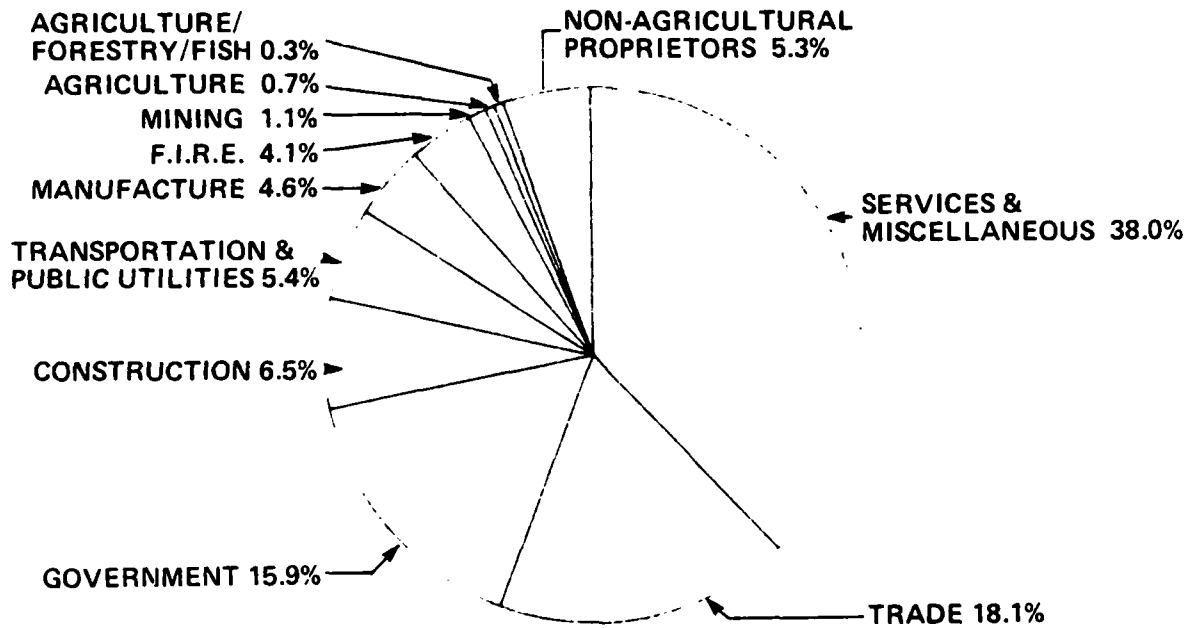
#### **Nevada (2.1.1.3.1)**

Figure 2.1.1.3-1 indicates 1979 employment shares by industrial sector in Nevada and the United States. Tables 2.1.1.3-1 and 2.1.1.3-2 show employment by industrial sector from 1974 through 1979 for the United States and Nevada. Fluctuations in total employment by place of employment between 1974 and 1979 for the Nevada ROI counties, and the annual average growth rates during that period, are shown in Table 2.1.1.3-3. Detailed data tables comparable to Tables 2.1.1.3-1 and 2.1.1.3-2 presenting employment by industrial sector from 1967 through 1979 for Nevada and the Nevada ROI counties can be found in the baseline employment sections of ETR's 2A, 2C, 2D, 2G, 2I, and 2L. These data were obtained from the Regional Economic Information System (REIS) maintained by the Bureau of Economic Analysis of the U.S. Department of Commerce. They are derived from establishment-based employment data compiled by individual state departments of employment security. The establishment-based REIS data differ from the employment estimates presented in Tables 2.1.1.2-1 and 2.1.1.2-2 in several ways: (1) employment can be disaggregated by major industrial sector, (2) multiple jobholders are included, and (3) employment is tabulated by place of employment rather than by place of residence.

The REIS data represent the most comprehensive employment measure available. Total employment as defined in the REIS data includes farm wage and salary employment, both farm and non-farm proprietors, and all federal government employees. The REIS data are available for all counties and states in the United States using comparable definitions, conventions, and sources.

## NEVADA

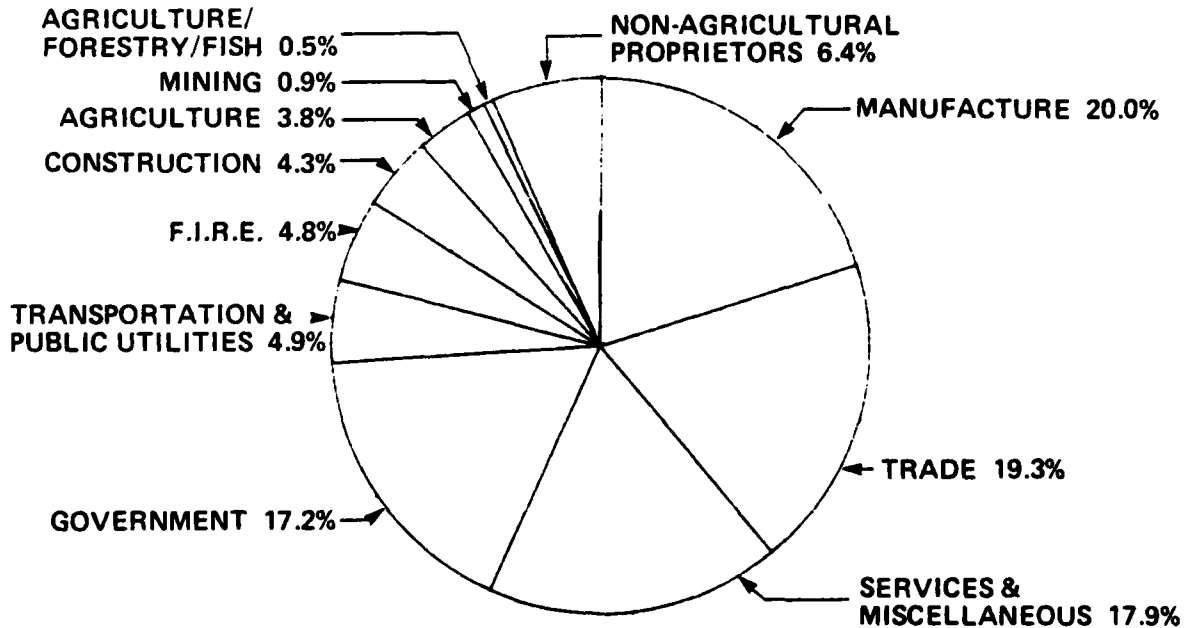
1979 TOTAL EMPLOYMENT = 426,730



CA-0433-A

## UNITED STATES

1979 TOTAL EMPLOYMENT = 105,452,000



CA-0430-A

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.1.3-1. Employment by type and broad industrial sources, Nevada and the United States, 1979.

Table 2.1.1.3-1.

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

UNITED STATES		1974	1975	1976	1977	1978	1979
Total employment		93905324	92330800	94737000	98125000	102287000	105450000
Number of proprietors		8779924	8762000	8766000	9073000	9324000	9600000
Farm proprietors		2907924	2880000	2844000	2852000	2779000	2729000
Non-farm proprietors		5872000	5882000	5922000	6221000	6545000	6871000
Total wage and salary employment		85125400	83568800	85971000	89052000	92923000	95810000
Farm		1332400	1326800	1412000	1333000	1293000	1310000
Non-farm		83793000	82242000	84559000	87719000	91670000	94520000
Private		66509000	64606000	66871000	69909000	73674000	76371000
Ag. Serv., For., Fish., and other		330000	345000	388000	416000	469000	503000
Mining		696000	748000	777000	822000	876000	956000
Construction		3978000	3572000	3614000	3081000	4094000	4545000
Manufacturing		20067000	18322000	19023000	19734000	20590000	21076000
Non-durable goods		8129000	7625000	7930000	8103000	8260000	8300000
Durable goods		11938000	10697000	11093000	11631000	12330000	12774000
Transportation and public utilities		4718000	4533000	4568000	4702000	4910000	5134000
Wholesale trade		4230000	4427000	4568000	4737000	5000000	52310000
Retail trade		12879000	12716000	13284000	13887000	14661000	15075000
Finance, insurance, and real estate		4296000	4248000	4339000	4528000	4701000	5031000
Services		15313000	15695000	16310000	17202000	18034000	18871000
Government and government enterprises		17284000	17636000	1768000	17810000	17996000	18144000
Federal, civilian		2867000	2894000	2876000	2881000	2898000	29204000
Federal, military		2646000	2539000	2479000	2378000	2351000	23110000
State and local		11771000	12203000	12333000	12551000	12747000	12862000

(L) Between -49000 and +49000, and not equal to zero. Data included in totals.

(D) Not shown to avoid disclosure of confidential information. Data included in totals.

Source: U. S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April, 1981

Table 2.1.1.3-2.

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

NEVADA		1974	1975	1976	1977	1978	1979
Total employment		294716	301696	320353	352243	394579	426730
Number of proprietors		18765	18706	19295	21400	22096	22991
Farm proprietors		2149	1682	1715	1677	1545	1537
Non-farm proprietors		16617	17024	17580	19723	20351	21454
Total wage and salary employment		275951	282990	301058	330843	372483	401739
Farm		2300	2300	2700	2600	2000	2600
Non-farm		273651	280690	298358	328243	369483	401139
Private		216499	221049	236360	263423	302307	331200
Ag. Serv., For., Fish., and other		754	742	817	978	1077	1241
Mining		4250	4359	3688	4320	4173	4648
Construction		15424	12599	14777	15828	25886	27715
Manufacturing		12149	12185	13009	15180	17780	19440
Non-durable goods		4631	4709	5026	5563	5941	6206
Durable goods		7518	7476	7983	9617	11839	12234
Transportation and public utilities		16586	16877	17527	18857	20936	23115
Wholesale trade		8400	8802	9276	10055	11401	12673
Retail trade		41317	42733	47199	51181	58162	64759
Finance, insurance, and real estate		11461	11072	11826	13248	14907	17616
Services		105948	111700	118241	129756	147982	161993
Government and government enterprises		57152	59621	61998	64820	67376	67339
Federal, civilian		9133	9461	9642	9734	9866	10028
Federal, military		12687	12546	13359	12917	12876	12335
State and local		35332	37614	38997	42169	44634	46976

(L) Less than 10 employees, and not equal to zero. Data included in totals.

(D) Not shown to avoid disclosure of confidential information. Data included in totals.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April, 1981.



Table 2.1.1.3-3. Total employment by place of employment and average annual growth rate, Nevada ROI, 1974-1979.

County	1974	1975	1976	1977	1978	1979	1974-1979 Average Annual Growth Rate
Clark	155,911	159,961	170,268	189,013	209,388	229,932	8.1
Eureka	534	545	569	569	629	704	5.7
Lincoln	1,084	1,128	1,089	1,187	1,333	1,332	4.2
Nye	5,496	5,565	5,628	5,562	6,164	6,530	3.5
White Pine	4,390	4,078	3,411	3,800	3,621	3,360	-5.2
Nevada ROI	167,415	171,277	180,965	200,131	221,135	241,858	7.6
Rest of State	127,301	130,419	139,388	152,112	173,444	184,872	7.7
State Total	294,716	301,696	320,353	352,243	394,579	426,730	7.7
United States	93,905,324	92,330,800	94,737,000	98,125,000	102,287,000	105,452,000	2.3

T5520/10-2-81

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1981.

Job growth in Nevada--using this broad measure of employment--was very rapid during the period 1974 to 1979. Total employment in the state grew from about 295,000 jobs in 1974 to almost 427,000 jobs in 1979. This represents average annual year-over-year growth of 7.7 percent. In contrast, total U.S. employment grew at an average annual rate of only 2.3 percent during this period. U.S. employment declined by 1.7 percent from 1974 to 1975 during the sharp recession of those years, while in Nevada the recession was marked simply by a reduction in the rate of employment growth to 2.4 percent in 1974 to 1975. Nevada's employment growth then accelerated to 6.2, 10.0, and 12.0 percent annually during the next three years, before moderating to 8.1 percent from 1978 to 1979.

The main component of Nevada's employment--wage and salary jobs--grew from 276,000 in 1974 to 404,000 in 1979, an annual rate of growth of 7.9 percent. Proprietary employment grew much more slowly--4.1 percent per year on the average. Wage and salary employment in the service sector, including gaming, hotels, and tourism, was the principal source of state-wide employment growth. Service sector jobs increased at an average annual rate of 8.9 percent during 1974 to 1979.

The employment shares by sector in the Nevada state economy are distinctly different from the national sectoral shares. Over half of the jobs in Nevada are provided by the services and trade sectors, mainly due to the state's large gaming and tourism industries. In 1979 in Nevada, the services and trade sectors held 38.0 and 18.1 percent employment shares, respectively. In comparison, the national services and trade employment shares that year were 17.9 and 19.3 percent. The government sector is the next largest employer in Nevada, providing 15.9 percent of the total number of jobs. At the national level, the government sector holds a slightly larger percentage of total employment (17.2 percent in 1979). Manufacturing industries make up the largest employment sector in the United States, providing one of every five jobs in the nation. In Nevada, only one of every 22 jobs (4.6 percent in 1979) are in manufacturing industries. Agricultural employment shares are very low in Nevada, providing about 1.0 percent of total employment in 1979. At the national level, 3.8 percent of the total number of jobs were in agriculture that year. Agriculture registered the only sectoral employment decline in Nevada over the 1974 to 1979 period. Reductions in the number of farm proprietors offset a small increase in farm wage and salary employment.

Employment growth in Clark County was even faster than the state average during the years 1974 to 1979. The number of jobs in Clark County grew at an average annual rate of 8.1 percent over this period, with the result that, by 1979, 53.9 percent of Nevada's employment was located in the county. Employment grew more rapidly than the U.S. average, but slower than the state-wide pace, in Eureka, Lincoln, and Nye counties, which registered average annual gains of 5.7, 4.2, and 3.5 percent, respectively. Only White Pine County in the Nevada ROI experienced employment declines. Total proprietary and wage-and-salary employment (farm and non-farm) declined steadily from 4,390 jobs in 1974 to 3,360 jobs in 1979, a rapid average annual loss of 5.2 percent.

All the Nevada ROI counties are heavily dependent on a single industrial sector for employment. The services sector provides 41.4 and 53.0 percent of the total number of jobs in Clark and Nye counties, respectively. In Clark County the services sector fueled by expanding tourism and gaming activity, has grown from

63,800 jobs in 1974 to 95,300 in 1979. Nye County services employment has remained at around 3,450 jobs throughout the 6-year period, reflecting stable employment conditions among federal contractors at Nellis Air Force Range and the NRC Test Site. Many of these workers live in Clark County but commute to work in Nye County.

Government is the largest employment sector in Lincoln and White Pine counties, providing 30.6 and 24.9 percent of total employment, respectively, in 1979. In both counties, government employment has increased between 1974 and 1979. Government became the second leading employment sector in Nye County after federal military employment increased by 250 jobs in 1978.

Since 1979, Nye County has experienced rapid increases in mining activity near Tonopah that, combined with expanded military activity, have created a local economic boom (North Las Vegas, Nevada, The Valley Times, Monday, July 13, 1981, Section A,3). The principal source of this recent growth is the Anaconda Corporation's \$220 million molybdenum project.

The mining sector provided 50.0 percent of total employment in the small Eureka County economy during 1979, after an increase of more than 130 jobs over the 1974 to 1979 period. In Lincoln County, mining provided almost one of every five jobs during 1979, despite a 10 percent cutback in employment from the previous peak year. Mining employment in Lincoln County has doubled over the 1974 to 1979 period. In 1974, mining was the leading employment sector in White Pine County. However, the mining share of total county employment dropped from 25.1 percent in 1974 to 6.0 percent in 1979, mainly due to layoffs by the Kennecott Copper Company. Mining provided 12.3 percent of Nye County's jobs in 1979.

Fluctuations in minerals prices can greatly affect the economies of Nevada's rural counties. Nevada mineral output dropped substantially from 1977 to 1978, largely because of the shutdown of copper mining operations in White Pine County. Depressed copper prices and increased production costs associated with meeting clean air regulations appear to be major factors contributing to this closure. In 1978, gold replaced copper as Nevada's leading mineral commodity for the first time in 50 years. Nevada ranked first in the nation in the production of barite, magnesite, and mercury, and second in gold (See ETR-11, Table 3.1.1-1).

The mining sector has major effects on other sectors of the economy, particularly construction and manufacturing. In general, employment in the mining sector includes only mineral extraction. Ore concentration is included in the manufacturing sector except in certain cases where the ore concentration process is located on the mineral extraction site. Basic metals refining is normally included in the manufacturing sector.

Mining activities have strong backward linkages with the construction industry. Prior to development of a major mineral deposit, large numbers of construction workers may be required for mine construction and ancillary minerals-processing plants. These workers require housing and other services, adding to the impact of this construction.

Current minerals exploration in Nevada is proceeding at an annual rate of over \$100 million, and \$15 million is being spent annually on geothermal exploration.

Although most geothermal exploration activities have occurred outside of the Nevada ROI counties, this may be more an indicator of currently feasible applications of geothermal energy than of potential geothermal supplies. Intensified exploration and development of geothermal resources in the Nevada ROI counties would expand overall economic activity in these areas.

The major industrial sectors are ranked by their 1979 employment shares in each ROI county as follows:

- o Clark: services (41.4 percent), wholesale and retail trade (18.9), government (15.3), manufacturing (6.8), and transportation and public utilities (5.5).
- o Eureka: mining (50.0 percent), agriculture (15.3), government (13.9), and retail trade (5.1).
- o Lincoln: government (30.6 percent), mining (19.7), retail trade (12.8), agriculture (10.7), and services (8.6).
- o Nye: services (53.0 percent), government (15.7), and mining (12.3).
- o White Pine: government (24.9 percent), wholesale and retail trade (19.9), services (13.4), and manufacturing (9.0).

Clark, Lincoln and White Pine counties are included in the AOA for the Coyote, Beryl and Ely operating bases. A detailed discussion of sectoral employment in those counties can be found in the latter area analyses sections of this chapter.

Table 2.1.1.3-4 shows the most recent wage and salary employment data available from the Nevada Employment Security Department (NESD). Since NESD uses a different classification for industrial sectors, these data are not strictly comparable to either the previously discussed BEA/REIS data, or wage and salary employment data from other states' employment agencies. For example, NESD excludes federal military employment from the government sector estimate while the BEA includes this data. NESD also includes agricultural wage and salary employment while the Texas Employment Commission for instance does not include this information. This table is presented to show the most recent employment declines and increases in the broad industrial sectors. Mining employment increased in 1980 by 33.5 percent over the 1979 level. Both construction and manufacturing employment declined in 1980. Total wage and salary employment in Nevada increased by 4.3 percent between 1979 and 1980.

#### Utah (2.1.1.3.2)

Figure 2.1.1.3-2 indicates 1979 employment shares by industrial sector in Utah and the United States. Table 2.1.1.3-5 presents employment by industrial sector from 1974 through 1979 for Utah. Analogous data for the United States are presented in Table 2.1.1.3-1. Fluctuations in total employment by place of employment between 1974 and 1979 for the Utah ROI counties and the annual average growth rates during that period are shown in Table 2.1.1.3-6. Detailed data tables comparable to Tables 2.1.1.3-1, 2.1.1.3-2, and 2.1.1.3-5 that present

Table 2.1.1.3-4. Wage and salary employment by industrial sector, Nevada, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	381,261	397,643	4.3
Agriculture, Forestry and Fishing	2,169	2,448	12.9
Mining	4,657	6,219	33.5
Construction	27,668	26,434	-4.5
Manufacturing	19,449	19,200	-1.3
Transportation, Communication and Public Utilities	21,457	22,403	4.4
Trade	77,320	80,330	3.9
Finance, Insurance and Real Estate	16,875	17,777	5.3
Services and Miscellaneous	156,432	166,002	6.1
Government	54,662	56,830	4.0

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Source: Nevada Employment Security Department, 1980, 1981.

Table 2.1.1.3-5.

EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

UTAH	1974	1975	1976	1977	1978	1979
Total employment	499163	504280	525350	556412	590327	613214
Number of proprietors	44257	44543	44750	48671	50137	51837
Farm proprietors	13844	13650	13133	13694	13262	13129
Non-farm proprietors	30413	30893	31417	34477	36877	38735
Total wage and salary employment	454906	459737	480600	507741	540390	561757
farm	5800	6000	6900	6500	6700	5000
Non-farm	449106	452937	473700	501241	533690	556257
Private	337622	329213	348677	371588	400890	421497
Ag. Serv., For., Fish., and other	1129	1094	1222	1284	1390	1490
Mining	13220	13166	13918	14806	15712	17730
Construction	24116	24372	27882	31799	34696	35498
Manufacturing	69012	67040	69924	73829	79557	84869
Non-durable goods	24772	24665	25915	26907	28033	28278
Durable goods	44240	42375	44009	46922	51524	56590
Transportation and public utilities	26770	26921	27823	29074	31227	33134
Wholesale trade	25038	25735	27389	28669	31277	33395
Retail trade	76851	77969	83613	88016	94462	95263
Finance, insurance, and real estate	21052	20320	21292	22970	24937	26553
Services	67034	72396	75714	81121	87632	91866
Government and government enterprises	122884	123724	125023	129653	132800	134760
Federal, civilian	36197	35716	35982	36009	36185	36474
Federal, military	14186	12650	13042	12903	13266	14973
State and local	72501	75358	75999	80741	83347	87313

(1.) Less than 10 employees, and not equal to zero. Data included in totals.

(2.) Not shown to avoid disclosure of confidential information. Data included in totals.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April, 1981.

Table 2.1.1.3-6. Total employment by place of employment and average annual growth rate, Utah ROI, 1974-1979.

County	1974	1975	1976	1977	1978	1979	1974-1979 Average Annual Growth Rate
Beaver	1,712	1,651	1,713	1,731	1,691	1,614	-1.2
Iron	5,836	6,105	6,249	6,363	6,661	6,792	3.1
Juab	2,120	2,069	2,049	2,173	2,164	2,127	0.1
Millard	3,256	3,412	3,395	3,389	3,395	3,492	1.4
Salt Lake	246,160	247,460	253,194	277,238	295,758	306,121	4.5
Utah	53,868	53,755	56,335	60,382	65,393	68,014	4.8
Washington	5,357	5,451	5,951	6,376	6,997	7,433	6.8
Utah ROI	318,309	319,903	333,886	357,652	382,059	395,593	4.4
Rest of State	180,854	184,377	191,464	198,760	208,470	218,021	3.8
State Total	499,163	504,280	525,350	556,412	590,529	613,614	4.2
United States	93,905,324	92,330,800	94,737,000	98,125,000	102,287,000	105,452,000	2.3

T5521/10-2-81

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1981.

employment by industrial sector from 1967 through 1979 for Utah and the Utah ROI counties can be found in the baseline employment sections of ETR's-2A-2L. These data were obtained from the Regional Economic Information System of the U.S. Bureau of Economic Analysis.

Employment growth in Utah from 1974 to 1979 averaged 4.2 percent per year. While this growth was substantially less than Nevada's expansion of 7.7 percent annually, it still was almost twice the average U.S. yearly growth of 2.3 percent. As in Nevada, the national recession of 1974 to 1975 resulted only in a slow-down in employment growth, not an actual decline. Wage-and-salary employment accounted for 93.4 percent of the new jobs in Utah during 1974 to 1979. Services, manufacturing, and trade have been the leading growth sectors in the state. Service employment grew at an average rate of 5.9 percent per year in Utah, compared to nationwide growth in service jobs of 4.2 percent. Manufacturing employment increased in the state at an average annual rate of 4.7 percent, notably higher than the U.S. average of 1.0 percent. Trade-sector jobs (wholesale and retail combined) grew at an average rate of 4.8 percent during 1974 to 1979, compared to overall U.S. growth in these sectors of 3.5 percent per year. All other major industrial sectors in Utah experienced increases in employment from 1974 to 1979, except the agricultural sector. The number of farm proprietors and wage-and-salary workers dropped from 19,600 to 18,600 during 1974 to 1979.

In Utah, employment shares by industry are similar to national job shares. The government share is greater and the manufacturing portion is lower for the state than for the United States. Utah government employment rose modestly over the 1974 to 1979 period from 122,900 to 134,800, though government's share of total employment in the state declined from 24.6 percent in 1974 to 22.0 percent in 1979. The next largest employment sectors are wholesale and retail trade, which together provided a 20.9 percent portion of Utah's employment in 1979. Services and manufacturing held 15.0 and 14.2 percent shares that year.

The economy of Salt Lake County provides nearly as large a percentage of Utah's jobs--49.9 percent in 1979--as Clark County does of Nevada's jobs. Total employment in Salt Lake County grew at an average rate of 4.5 percent from 1974 to 1979, faster than the state-wide average of 4.2 percent. Within the Utah ROI, only three other counties--Iron, Utah, and Washington--showed any significant growth from 1974 to 1979. Iron County's employment growth averaged 3.1 percent per year during this period, while Utah and Washington counties registered average annual gains of 4.8 and 6.8 percent, respectively. The other three counties in the Utah ROI--Beaver, Juab, and Millard--experienced no significant upward or downward trend during 1974 to 1979. There was significant employment growth on a labor force basis in Juab and Millard counties prior to 1974 (see baseline data tables in ETR-2F and 2H) but not from 1974 to 1979.

Of the seven Utah ROI counties, government was the largest sectoral employer in Beaver, Iron, and Juab counties and second largest in Millard, Salt Lake, and Washington counties. Only in Utah County did government employment rank low (fourth, behind services, manufacturing, and trade) compared to other sectors, though, it still held a 17.5 percent share of the total number of jobs in 1979. Government employment levels decreased slightly in Millard County between 1974 and 1979, due mainly to a cutback of 50 state and local jobs in 1977.



Wholesale and retail trade provides about one-fourth of the jobs in Salt Lake and Washington counties and was the leading employment sector there in 1979. It was the second or third largest sector in the other ROI counties and has shown increases in all cases over the 1974 to 1979 period.

Agriculture is the leading employment sector in Millard County, accounting for 27.8 percent of the total number of jobs in 1979. Agriculture is the second largest employer in Beaver County and ranks fourth in Iron and Juab counties. The number of farm proprietors and farm wage and salary jobs dropped in all ROI counties from 1974 to 1979.

The services sector in Utah County was the largest in 1979, providing 13,800 jobs. In Salt Lake County, the services sector accounted for 51,100 jobs in 1979, 16.7 percent of county employment. Manufacturing employment levels dropped in Beaver and Juab counties between 1974 and 1979. In Juab, with the loss of 90 manufacturing jobs between 1978 and 1979, the manufacturing sector lost its status as the leading employment group. The 1979 percentage shares of major industrial sector employment, by county, are as follows:

- o Beaver: government (23.1 percent), agriculture (17.7), and wholesale and retail trade (16.9).
- o Iron: government (23.3 percent), wholesale and retail trade (22.7), services (9.6), agriculture (8.2), and manufacturing (7.3).
- o Juab: government (21.1 percent), manufacturing (20.9), wholesale and retail trade (18.3), and agriculture (12.5).
- o Millard: agriculture (27.8 percent), government (20.2), wholesale and retail trade (14.7), and manufacturing (7.0).
- o Salt Lake: wholesale and retail trade (24.4 percent), government (17.0), services (16.7), and manufacturing (14.7).
- o Utah: services (20.3 percent), manufacturing (19.5), wholesale and retail trade (18.8), and government (17.5).
- o Washington: wholesale and retail trade (26.1 percent), government (18.6), services (12.2), manufacturing (8.6), construction (8.1), and agriculture (5.5).

Beaver, Iron, Juab, Millard and Washington counties are included in the AOA for the Beryl, Delta, and Milford operating bases. A detailed discussion of sectoral employment in these counties is found in the latter area analyses sections of this Chapter.

Table 2.1.1.3-7 shows the latest average annual nonagricultural wage and salary employment estimates related by the Utah Department of Employment Security (UDES). These data are not strictly comparable to either the BEA/REIS data or wage and salary employment estimates from other states' employment agencies since UDES uses different industrial classifications. This table does however, indicate the most recent employment declines and increases in the broad

Table 2.1.1.3-7. Nonagricultural wage and salary employment by industrial sector, Utah, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	548,421	550,787	0.4
Mining	17,694	18,500	4.6
Construction	35,643	31,549	-11.5
Manufacturing	86,734	87,700	1.1
Transportation, Communication and Public Utilities	33,573	34,120	1.6
Trade	129,379	128,678	-0.5
Finance, Insurance and Real Estate	25,818	25,768	-0.2
Services and Miscellaneous	96,352	99,420	3.2
Government	123,230	125,046	1.5

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Source: Utah Department of Employment Security, 1980; 1981.

industrial sectors. The construction sector has declined recently by more than 11 percent. Trade and Finance, Insurance and Real Estate have also declined slightly from 1979 levels. The largest employment growth was in the services, government, and mining sectors.

#### **Projected Labor Force, Employment, and Unemployment Without M-X (2.1.1.4)**

##### **Baseline Projections (2.1.1.4.1)**

Recent trends in labor force, employment, and unemployment in the Nevada/Utah ROI counties have been projected into the future to estimate economic conditions in these counties without M-X. These estimates have been made using the best available projections of population at the county level, published by the Nevada State Planning Coordinators Office and the Bureau of Economic and Business Research of the University of Utah. County data on labor force and unemployment from 1975 to 1980 are then used to derive probable trends from these projections in baseline labor force, employment, and unemployment conditions.

Table 2.1.1.4-1 presents average labor force participation rates and unemployment rates for each of the counties in the Nevada/Utah ROI for the period 1975 to 1980. The labor force participation rate is the percentage of the total population which is in the labor force (those persons either employed or actively seeking work). The unemployment rate is the share of the labor force which is not employed. The assumption is made that the recent average behavior of these county-level measures is the best guide to their average future levels. Significant variation may occur from year to year, but the long-term behavior of these rates is assumed to fluctuate around this average. An average based on a longer time series has been rejected in this analysis to best capture the effects of long-term changes in the demographic composition of the labor force which became most noticeable nation-wide since the early 1970s.

Both participation rates and unemployment rates show significant variation from one county to another within the region. While 46.1 percent of the region's total population is in the labor force, participation rates vary from a low of 30.7 percent in Nye County to a high of 54.2 percent in Eureka County. The major metropolitan areas in the ROI—Salt Lake and Utah, and Clark counties—have recent average participation rates of 45.8 and 47.8 respectively.

The region's unemployment rate during the period 1975 to 1980 averaged 6.1 percent of the labor force. At the county level, average unemployment rates for 1975 to 1980 varied from 3.5 percent in Eureka County to 12.2 percent in White Pine County. The White Pine County unemployment rate was unusually high in 1976 due to the closing of the Kennecott copper operations. The projected unemployment rate for White Pine County is 9.1 percent, based on data from 1974 through 1980, excluding the high unemployment year of 1976. Clark County's unemployment rate averaged 7.7 percent of the labor force during 1975 to 1980 and is expected to remain at that level through 1990. Clark County's unemployment rate is assumed to decline slightly after 1990, consistent with assumptions made by the Section 208 planning projections for Clark County (Clark County Board of Commissioners, 1977).

Table 2.1.1.4-1. Baseline labor force participation rate and unemployment rate projections, Nevada/Utah ROI (percent).

County	Labor Force Participation Rate	Unemployment Rate
Beaver	44.8	6.3
Clark	47.8	7.7 <sup>1</sup>
Eureka	54.2	3.5
Iron	44.0	5.9
Juab	38.5	7.0
Lincoln	45.5	5.3
Millard	40.3	5.0
Nye	30.7	3.9
Salt Lake/Utah	45.8	5.2
Washington	37.7	5.2
White Pine	40.0	9.1 <sup>2</sup>
Nevada/Utah ROI <sup>3</sup>	46.1	6.1

T5522/9-11-81

<sup>1</sup>Clark County unemployment is projected to decline moderately after 1990.

<sup>2</sup>White Pine County unemployment rate is the 1974-80 average, excluding the extremely high unemployment year of 1976.

<sup>3</sup>Regional average is weighted by the size of the labor force and number of unemployed in each county.

Sources: HDR Sciences calculations, based on data from Nevada Employment Security Department and Utah Department of Employment Security.

Note: Projections are averages for 1975-80. Earlier years were excluded because of secular changes in the demographic composition of the labor force which became most noticeable since the early 1970s.

County-level population projections (see ETR-27), labor force participation rates, and unemployment rates as presented in Table 2.1.1.4-1, are used to project employment by place of residence using the labor force concept for each of the ROI counties from 1982 through 1994. These projections of regional employment, without M-X, are presented in Table 2.1.1.4-2 for Baseline 1, or "trend-growth" conditions, and in Table 2.1.1.4-3 for Baseline 2, or "high-growth" conditions. The trend-growth baseline projection represents a continuation of 1967 to 1978 trends in the region. The high-growth projections include specific projects which are large relative to the local economies in which they would be constructed. These projections are presented through 1994--five years after construction of the M-X basing system would be complete and fully operational.

Under trend-growth conditions, employment in the 12-county Nevada/Utah ROI is projected to grow from 631,000 in 1982 to 871,000 in 1994. This represents average annual growth of 2.7 percent. Clark County is projected to lead the region in growth, from 219,000 jobs in 1982 to 331,000 jobs in 1994--growth of about 3.5 percent per year. Salt Lake and Utah counties are expected to grow more slowly, at approximately 2.3 percent annually. Among the more rural counties in the ROI, Iron and Washington counties are the two largest local job centers. Employment in these counties is projected to grow at a 2.4 percent annual rate for Iron County and a 2.9 percent rate for Washington County. Employment in Millard, Juab, Nye, and Lincoln counties is projected to grow at annual rates of 2.2, 2.5, 2.9, and 3.0 percent, respectively. More modest growth is projected for Eureka and Beaver counties--about 1.7 and 1.4 percent, respectively. No significant growth is projected for White Pine County throughout this period under trend-growth conditions.

Over the long term, the high-growth projections for the region as a whole differ very little from the trend-growth projections. The long-term (1994) difference between the two projections is only 8,000 jobs. Differences between the two projections are larger during the years 1985 through 1988. During these years, the high-growth projections are approximately 11,000 to 12,000 jobs higher than the trend-growth projections.

The biggest differences between the two sets of baseline projections occur at the county level. The differences in assumptions that underlie these two sets of baseline projections are sufficient to significantly change the employment projections for four counties: Beaver, White Pine, Millard, and Juab. In Beaver County, the high-growth projection of 5,030 jobs in 1986 exceeds the trend-growth projection of 2,147 jobs in that same year by 134 percent. In White Pine County, the high-growth projection for 1987 of 5,829 jobs is 94 percent larger than the 3,000 jobs projected under trend-growth conditions. In Millard County in 1985, the high-growth projection of 7,177 jobs exceeds the trend-growth projection of 4,188 jobs by 71 percent. In Juab County the high-growth projection of 3,376 jobs in 1987 exceeds the trend-growth projection of 2,574 jobs by 31 percent. In addition, in Salt Lake and Utah counties, up to 3,000 jobs indirectly associated with higher growth in the rural counties would be created during 1985 to 1988. For the remaining counties, differences between the two sets of projections are very slight. Table 2.1.1.4-4 summarizes the principal differences between the two alternative projections.

Table 2.1.1.4-5 indicates that only slight changes are forecast in sectoral employment shares over the projection period. Only the share of total ROI employment in government is forecast to decline by more than one percent over the

Table 2.1.1.4-2.

BASELINE 1: TREND-GROWTH EMPLOYMENT PROJECTIONS, NEVADA/UTAH ROI, 1982-1994.

COUNTY	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
BEAVER	1955.	2006	2062.	2120.	2147.	2167.	2106.	2206.	2224.	2249.	2274.	2297.	2316.
CLARK	218558.	226313	234342.	242657.	251970.	261646.	271687.	282122.	292948.	302099.	311526.	321252.	331276.
EUREKA	644.	656	668.	681.	690.	701.	717.	727.	743.	753.	764.	779.	790.
IRON	7623.	7864.	8136.	8425.	8637.	8838.	9047.	9262.	9479.	9653.	9832.	10005.	10167.
JUAB	2147.	2243.	2350.	2466.	2522.	2574.	2630.	2684.	2739.	2780.	2820.	2858.	2892.
LINCOLN	1690.	1741.	1793.	1847.	1900.	1956.	2017.	2077.	2137.	2202.	2271.	2335.	2409.
MILLARD	3678.	3834.	4004.	4188.	4285.	4377.	4473.	4568.	4663.	4703.	4739.	4772.	4796.
NYE	2883.	2983.	3082.	3182.	3275.	3372.	3470.	3573.	3679.	3773.	3868.	3968.	4068.
SALT LAKE/UTAH	380370.	394230.	409410.	425805.	434985.	443241.	451975.	460343.	468541.	476205.	483719.	490687.	497004.
WASHINGTON	8594.	8955.	9330.	9721.	9989.	10263.	10545.	10835.	11133.	11363.	11597.	11837.	12081.
WHITE PINE	2983.	2987.	2991.	2995.	2996.	3000.	3003.	3011.	3014.	3018.	3022.	3025.	3029.
DEPLOYMENT REGION	631124.	653811.	678167.	704087.	723397.	742134.	761749.	781406.	801301.	818798.	836431.	853815.	870827.

SOURCE: HDR SCIENCES, BASED ON POPULATION, LABOR FORCE, AND UNEMPLOYMENT DATA FROM STATE SOURCES.

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Table 2.1.1.4-3.

BASELINE2 HIGH-GROWTH EMPLOYMENT PROJECTIONS, NEVADA/UTAH ROI, 1982-1994.

COUNTY	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
BEAVER	2749	3637	4129	4615	5030	4207	4078	4120	4183	4252	4320	4389	4435
CLARK	218648	226470	234582	243086	252471	262152	272152	282304	293277	302446	311888	321631	331670
EUREKA	644	656	668	681	691	701	717	727	743	753	764	779	790
IRON	7638	7894	8179	8488	8709	8901	9105	9313	9525	9700	9881	10053	10217
JUAB	2340	2757	3056	3321	3321	3376	3341	3206	2995	3041	3088	3132	3168
LINCOLN	1690	1742	1794	1849	1903	1959	2019	2079	2139	2203	2273	2338	2411
MILLARD	4556	4851	6065	7177	7079	7226	7024	6179	5712	5768	5832	5880	5936
NYE	2883	2983	3083	3184	3277	3374	3471	3574	3680	3775	3870	3970	4070
SALT LAKE/UTAH	380987	395316	411126	428593	438073	446371	454834	462602	470371	478129	485730	492763	499181
WASHINGTON	8594	8955	9330	9721	9989	10263	10345	10835	11133	11363	11597	11837	12081
WHITE PINE	2984	2989	3073	4575	5152	5829	5563	4985	4598	4644	4697	4732	4778

DEPLOYMENT REGION 633712 658249 685084 715289 735694 754399 772848 790124 808356 826075 843939 861511 878737

SOURCE: HDR SCIENCES, BASED ON POPULATION, LABOR FORCE, AND UNEMPLOYMENT DATA FROM STATE SOURCES. SEE TEXT.

CT

Table 2.1.1.4-4.

Difference between trend-growth and high-growth  
baseline employment projections, selected Nevada/Utah  
ROI counties, 1982-94 (number of employed persons).

Year	Beaver County	Juab County	Millard County	White Pine County	Other Counties <sup>1</sup>	Nevada/Utah ROI Total
1982	794	193	878	1	722	2,588
1983	1,631	514	1,018	2	1,274	4,439
1984	2,066	706	2,061	82	2,002	6,917
1985	2,495	855	2,989	1,580	3,284	11,203
1986	2,883	799	2,794	2,156	3,667	12,299
1987	2,041	802	2,849	2,829	3,704	12,225
1988	1,892	711	2,552	2,560	3,385	11,100
1989	1,914	522	1,611	1,974	2,695	8,716
1990	1,959	256	1,049	1,584	2,208	7,056
1991	2,003	261	1,065	1,626	2,321	7,276
1992	2,046	267	1,093	1,675	2,425	7,506
1993	2,092	274	1,117	1,707	2,508	7,698
1994	2,120	276	1,140	1,749	2,625	7,910

T5523/9-11-81

<sup>1</sup> Primarily Salt Lake and Utah counties, indirectly associated with develop-  
ments in the four counties shown.

Source: HDR Sciences calculations, based on population, labor force,  
and unemployment data from Nevada Employment Security Department  
and Utah Department of Employment Security.



Table 2.1.1.4-5. Projected employment shares by industrial sectors, baselines 1 and 2, Nevada/Utah ROI, 1980, 1985, 1990, and 1995 (as a percentage of total employment).

Industry	1980		1985		1990		1995	
	Baseline 1	Baseline 2	Baseline 1	Baseline 2	Baseline 1	Baseline 2	Baseline 1	Baseline 2
Agriculture	1.4	1.4	1.2	1.2	1.1	1.1	1.0	1.0
Mining	1.7	1.7	1.6	1.8	1.6	1.9	1.6	1.9
Construction	6.3	6.3	6.4	6.9	6.5	6.4	6.6	6.5
Manufacturing	10.1	10.1	9.9	9.9	9.9	9.3	9.8	9.8
Transportation	6.0	6.0	6.0	6.0	6.1	6.1	6.1	6.2
Trade	22.0	22.0	21.9	21.7	21.9	21.8	21.9	21.8
Finance, Insurance, and Real Estate	4.5	4.5	4.7	4.7	4.7	4.7	4.8	4.8
Services	27.3	27.2	27.9	27.6	28.4	28.3	29.0	28.5
Government	15.3	15.3	14.9	14.8	14.4	14.4	13.9	13.8
Non-Farm Proprietors	5.4	5.4	5.5	5.4	5.5	5.4	5.4	5.4

T3591/10-2-81

Source: University of Utah, 1980b.

1980-1995 period. Only services' percent share is projected to increase by more than one percent.

#### Major Non-M-X Developments in the Nevada/Utah ROI (2.1.1.4.2)

The differences between Baselines 1 and 2 are attributable to the inclusion of a number of projects in Baseline 2. These projects are primarily mineral extraction and processing and/or electrical energy production. High oil prices have encouraged the search for substitute fuels and technologies. In the study area, power plants using coal and, to a lesser extent, geothermal steam are the major anticipated energy production activities. Molybdenum and alunite mining also are potentially important within the ROI.

The Bureau of Economic and Business Research of the University of Utah, in consultation with the Nevada and Utah State Planning Coordinators Offices, has recommended that Baseline 1 (trend-growth) specifically include:

- o continuation of 1967-1978 growth trends;
- o construction of Anaconda Nevada Molybdenum Project (Nye County);
- o metal mining in Eureka and White Pine counties;
- o expansion of oil and gas activity; and
- o mineral exploration in the Utah portion of the ROI.

(See University of Utah, 1980a, pp. 2-3).

Baseline 2 (high-growth) specifically includes the following developments:

- o all the trend-growth activities of Baseline 1;
- o in White Pine County, the White Pine Power Project;
- o in Millard County:
  - Intermountain Power Project;
  - Continental Lime cement plant;
  - Brush Beryllium expansion;
  - Precision-Built Modular Homes;
- o in Juab County:
  - Martin-Marietta cement plant;
  - General Battery;
  - UFCO coal loading facility; and
- o in Beaver County:
  - geothermal power development;
  - molybdenum mining;
  - alunite mining and processing.

There is a degree of uncertainty regarding each of these Baseline 2 projects, though some may be more likely than others.

Other projects not assessed in this analysis include the following:

- o Allen-Warner Valley complex, including the following facilities:
  - Alton mine, southern Utah;
  - Warner Valley Power Plant, St. George, Utah;
  - Allen Power Plant, Clark County, Nevada;
  - coal slurry lines from mine to plants;
  - transmission lines from plants to southern California;
- o Rocky Mountain Pipeline, 1985;
- o Cove Fort Geothermal Power Plant, Millard County, Utah;
- o Reid Gardner Power Plant #4, Clark County, Nevada;
- o Mountain Fuel Coal Gasification Plant;
- o Valmy Power Plant, Valmy, Nevada; and
- o Mormon Mesa Solar Power Plant.

These projects did not receive treatment because a) their effects on employment were expected to be small, b) their probability of realization was deemed relatively low, or c) their principal effects were likely to occur outside the Nevada/Utah ROI.

In Beaver County, the Pine Grove Molybdenum Project is the primary source of the differences between Baseline 1 and Baseline 2. This molybdenum mining and milling development accounts for about 90 percent of the difference in jobs between Baseline 2 and Baseline 1 from 1982 through 1986, and about 40 percent thereafter. Alunite mining and processing account for about 60 percent of the difference between the two baselines after 1986. The Roosevelt Hot Springs geothermal project accounts for about 5-10 percent of the difference throughout the projection period.

The principal cause of the differences between trend-growth and high-growth projections in Millard County is the Intermountain Power Project. It accounts for about 80 percent of the difference between the two baselines after 1984. The Martin-Marietta cement plant, under construction in Juab County, is the primary reason for the difference between the two baselines in 1982 to 1983, and accounts for about 15 percent of the difference during the rest of the period.

#### Comparison of Alternative Projections (2.1.1.4.3)

In order to evaluate the baseline projections in Tables 2.1.1.4-2 and 2.1.1.4-3, it is useful to compare these projections to alternative employment projections available for the ROI counties and states. Two such projections are (1) projections by the University of Utah's Bureau of Economic and Business Research (BEBR), and (2) projections by Chase Econometrics.

The BEBR developed employment projections for the Nevada/Utah ROI were used to derive the population projections used in this analysis. Because the BEBR projections were done on an establishment basis rather than a labor force basis, it was not possible to directly include the BEBR employment projections here. The trend-growth projections used in this analysis are based on the BEBR population projections for Utah and therefore indirectly on the BEBR employment projections. They assume average annual employment growth of 3.7 percent from 1982 to 1985, of 2.6 percent from 1985 through 1990, and of 2.1 percent for 1990 through 1994.

By comparison, the BEBR employment projections indicate an average rate of 3.9 percent per year employment growth from 1980 through 1985, of 2.2 percent for 1985 to 1990, and of 2.0 percent for 1990 to 1995. In other words, employment projections used in this analysis assume slightly slower growth in the near term than the BEBR projection and slightly more rapid growth after 1985.

Under high-growth conditions, projections used in this analysis indicate average growth of 4.1 percent per annum for 1982 through 1985, 2.5 percent per year for 1985 through 1990, and 2.1 percent per year from 1990 through 1994. By comparison, the high-growth scenario developed by BEBR indicates 4.3 percent employment growth for 1980 through 1985, 2.0 percent employment growth for 1985 through 1990, and 2.0 percent for 1990 through 1995. As with the trend-growth baseline projections, employment assumptions included in this analysis indicate somewhat slower employment growth under baseline conditions for the near term and somewhat more rapid baseline employment growth beyond 1985.

Chase Econometrics forecasts employment growth for the state of Nevada of 4.5 percent per year for 1980 through 1985, and 4.6 percent per year from 1985 through 1990 (Chase Econometrics, 1981a). Utah's employment is projected by Chase to increase 2.8 percent annually from 1980 through 1985, and 3.8 percent annually from 1985 through 1990. For the two state economies combined, these projections represent employment growth of 3.5 percent annually from 1980 through 1985, and 4.1 percent annual growth from 1985 through 1990. The major difference between the Chase projections and those used in this analysis, as well as those of the Bureau of Economic and Business Research, occur in the employment projections beyond 1985. The Chase projection of 4.1 percent annual employment growth is twice as large as the BEBR projection of 2.0 percent annual employment growth. The Chase projection is about 1.5 percentage points per year greater than the projections used in this analysis.

Nevada/Utah employment growth rate without M-X is projected to be considerably higher than recent historical growth and higher than projected future growth for the United States as a whole. U.S. employment, on a labor force basis, grew at an average rate of 2.2 percent annually from 1970 through 1980 (Council of Economic Advisors, 1981, p. 264). By comparison, employment on a labor force basis in the 12-county Nevada/Utah ROI grew at an average rate of 4.9 percent--twice as fast as the U.S.--during the same period.

Projections for the U.S. economy by Chase Econometrics indicate an average employment growth rate of 2.3 percent annually for 1980 to 1985 and of 1.8 percent for 1985 to 1990. The growth advantage of the Nevada/Utah ROI during 1970-80 therefore is projected to continue, though the difference between ROI growth and U.S. growth is likely to be less than has recently been the case. Moreover, the difference between employment growth in the ROI and in the rest of the United States is projected to narrow after 1985.

Table 2.1.1.4-6 summarizes comparisons of the alternative employment projections.

While projected employment growth without M-X for the Nevada/Utah ROI and many of its counties is rapid compared to U.S. standards, it is representative of employment conditions throughout much of the western United States during the

Table 2.1.1.4-6. Projected average annual employment growth rates: Nevada/Utah ROI, Nevada/Utah two-state area, and United States (percent).

	1970-80	1980-85	1985-90	1990-95
EIS <sup>1</sup>				
Trend-growth	4.9	3.7	2.6	2.1
High-growth	4.9	4.1	2.5	2.1
BEBR				
Trend-growth	4.9	3.9	2.2	2.0
High-growth	4.9	4.3	2.0	2.0
Chase				
Two-state area	4.7	3.5	4.1	n.a.
United States	2.2	2.3	1.8	n.a.

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<sup>1</sup>For EIS projections, averages are for 1982-85, 1985-90, 1990-94.

Source: For EIS projections, HDR Sciences calculations, based on data provided by the University of Utah, Bureau of Business and Economic Research, the Nevada Employment Security Department and the Utah Department of Employment Security; for BEBR projections, the University of Utah, Bureau of Business and Economic Research; for Chase Econometrics projections, the Chase regional long-term forecast of first quarter 1981, and the U.S. long-term standard-trend forecast of second quarter 1981.

1970s (Nevada National Bank, Western Economic Overview, 1970-77). This growth also is occurring on a very small economic base compared to states and areas elsewhere within the United States. The Nevada/Utah ROI, even with rapid growth, will remain more sparsely developed economically than most of the United States.

## **TEXAS/NEW MEXICO REGION OF INFLUENCE (2.1.2)**

### **Introduction (2.1.2.1)**

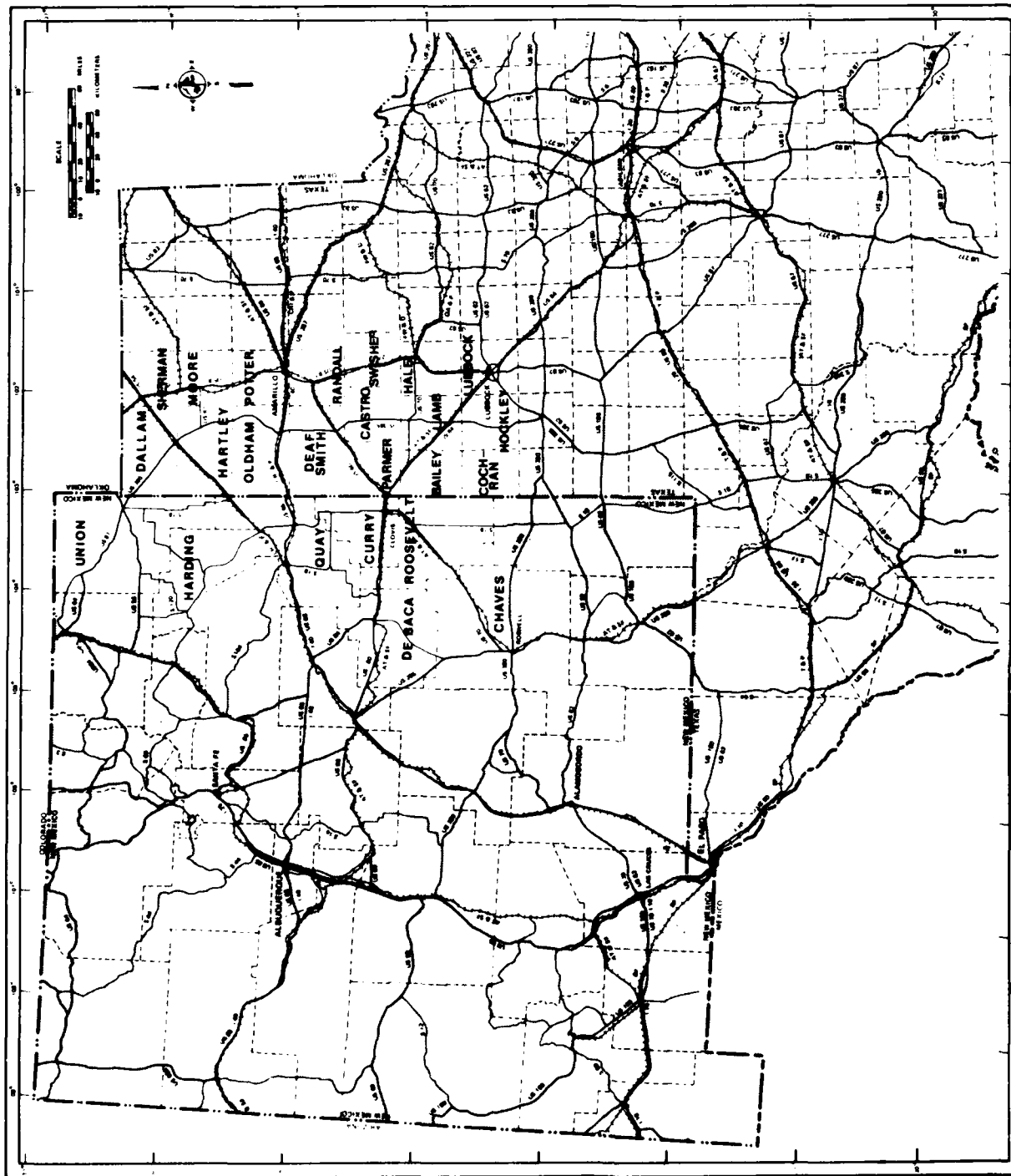
The Texas/New Mexico area is being considered as an alternate site for the deployment of the M-X system. Located in western Texas and eastern New Mexico, the region is generally known as the Southern High Plains. The designated Texas/New Mexico Region of Influence (ROI) is shown in Figure 2.1.2.1-1. It includes the Texas counties of Bailey, Castro, Cochran, Dallam, Deaf Smith, Hale, Hartley, Hockley, Lamb, Lubbock, Moore, Oldham, Parmer, Potter, Randall, Sherman, and Swisher, and the New Mexico counties of Chaves, Curry, De Baca, Harding, Quay, Roosevelt, and Union. Potential operating base sites are located in the vicinities of Clovis, New Mexico and Dalhart, Texas.

The Republic of Texas, led by Sam Houston and Steven Austin, declared its independence from Mexico in 1836. The Republic became a state in 1846, after ten years of financial trouble and constant skirmishes between the Anglo settlers, and the Mexicans or American Indians. A special annexation agreement with the United States allowed Texas to retain title to its public lands. U.S. annexation of Texas was the immediate cause of the Mexican War of 1846-1848.

After the U.S. Civil War, the economy of Texas developed rapidly. Cotton became the state's major crop, and the cattle industry spread throughout the Texas plains. Railroads and shipping provided new links to U.S. and foreign markets, and manufacturing output increased. Oil was discovered in 1901 and Texas rapidly increased its production of oil and natural gas. Over half of the nation's sulfur is mined in Texas as well.

Manufacturing industries in Texas have diversified, and the electronics field has experienced tremendous growth during the last two decades. Tourism has recently become a major industry. A number of national corporations have recently moved their headquarters from the northeastern United States to the Dallas-Fort Worth and Houston areas.

In 1846, New Mexico was quickly taken by U.S. troops after the outbreak of the Mexican War. Following the war, New Mexico became a U.S. Territory. After the U.S. Civil War, cattle and sheep ranching and dry-farming spread quickly over the state. The economy remained chiefly agricultural until World War II. At that time, atomic research at Los Alamos Scientific Laboratory and testing at Sandia Military Base and Kirtland Air Force Base in Albuquerque and at White Sand Missile Range near Alamogordo stimulated economic growth. The manufacture of precision instruments and electronic equipment has grown steadily since World War II as a by-product of atomic research. The trade and services sectors also have grown steadily since World War II partly due to increased development of recreation and tourism.



SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

2478-C-1 1252-C-2

Figure 2.1.2.1-1. Texas/New Mexico region of influence (ROI).

## **Recent Labor Force Trends (2.1.2.2)**

### **Texas (2.1.2.2.1)**

The major employment centers in Texas--Dallas, Fort Worth, Houston, and San Antonio--lie outside the 17 county Texas ROI. Within the ROI, Lubbock and Amarillo are the primary locations of employment. As indicated in Table 2.1.2.2-1, the Texas ROI counties had a total labor force of approximately 258,000 persons in 1980, 4 percent of the state's labor force. The Lubbock County labor force consisted of 100,000 persons in 1980, about 40 percent of the total labor force within the ROI. The Amarillo metropolitan area, consisting of Potter and Randall counties, accounted for an additional 86,000 workers. The remaining Texas ROI counties are primarily rural. Hale County is the largest of these with a labor force of about 16,000 persons in 1980. Oldham County has the smallest labor force, about 700 persons in 1980.

The unemployment rate for the Texas ROI counties averaged 4.4 percent in 1980, significantly below the state average of 5.2 percent and the U.S. average of 7.1 percent. The 1980 average unemployment rate for the ROI was largely determined by unemployment rates of 4.4 percent in Lubbock County, 5.3 percent in Potter County, and 2.7 percent in Randall County. Only Castro and Deaf Smith counties experienced unemployment rates in 1980 significantly higher than the state average, posting rates of 6.2 percent each. Hartley County had the lowest unemployment rate--2.6 percent--in the ROI in 1980.

Tables found in the baseline employment section of ETR-3B present recent historical data on population, labor force, employment, and unemployment for the 17 Texas ROI counties from 1974 through 1980. Only Lubbock, Potter, and Randall counties registered any significant labor force or employment changes during this period. The largest labor force increase from 1974 through 1980 in absolute terms occurred in Lubbock County, a rise from 87,000 in 1974 to more than 100,000 persons in 1979 and 1980. This represents an average annual labor force growth of 2.3 percent in the county, slightly above the average annual employment growth of 2.2 percent. The combined labor forces of Potter and Randall counties grew from 72,000 in 1974 to more than 86,000 in 1980, or 3.1 percent per year on the average. Employment in Potter and Randall counties grew at an average rate of 2.9 percent annually during 1974 to 1980.

Employment and labor force trends in the more rural Texas ROI counties have been negligible since 1974. Employment in most ROI counties fluctuated above and below the 7-year average for 1974 to 1980. In several counties--Castro, Cochran, Deaf Smith, Hockley, Lamb, Oldham, and Swisher--employment peaked in 1976 to 1977 and has fallen since. In Dallam County, employment fell from about 2,400 persons in 1974-1975 to less than 1,900 persons in 1976 and rose again to 2,400 persons in 1979 to 1980. Unemployment rates in the Texas ROI counties averaged somewhat less than their 1980 levels throughout the 7-year period 1974 to 1980. Only in Sherman and Oldham counties was the 1980 unemployment rate below its 1974 to 1980 average level.



Table 2.1.2.2-1. Texas civilian labor force, employment, unemployment, and unemployment rate, by place of residence, 1980.

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Bailey	3,410	3,243	167	4.9
Castro	3,543	3,324	219	6.2
Cochran	1,874	1,790	84	4.5
Dallam	2,522	2,413	109	4.3
Deaf Smith	8,125	7,619	506	6.2
Hale	15,621	14,795	826	5.3
Hartley	1,221	1,189	32	2.6
Hockley	9,188	8,809	379	4.1
Lamb	7,456	7,144	312	4.2
Lubbock	100,216	95,852	4,364	4.4
Moore	7,299	6,994	305	4.2
Oldham	740	717	23	3.1
Parmer	4,490	4,304	186	4.1
Potter	50,733	48,053	2,680	5.3
Randall	35,660	34,705	955	2.7
Sherman	1,393	1,346	47	3.4
Swisher	4,270	4,057	11,407	4.4
Texas ROI	257,761	246,354	11,407	4.4
Rest of State	6,153,989	5,828,896	325,093	5.3
State Total	6,411,750	6,075,250	336,500	5.2
United States	104,719,000	97,270,000	7,448,000	7.1

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Source: Texas Employment Commission, 1981; Council of Economic Advisors, 1981.

#### New Mexico (2.1.2.2)

The labor force in the state of New Mexico was 542,000 persons in 1980, mostly located in the metropolitan centers of Albuquerque, Santa Fe, Roswell, and Las Cruces. As shown in Table 2.1.2.2-2 only 51,000 persons--9 percent of the state's labor force--were located within the 7-county ROI. Of these 51,000 workers, about 70 percent or 35,000 resided in Chaves and Curry counties. The labor force in Harding County consisted of less than 600 persons in 1980. De Baca, Quay, Roosevelt, and Union counties had labor forces of 7,300 persons or less in 1980.

Unemployment rates in the New Mexico ROI counties in 1980 were well below the state average of 7.4 percent and the U.S. average of 7.1 percent. The average unemployment rate for the 7-county ROI was 5.3 percent in 1980. The lowest unemployment rate in the ROI was 3.1 percent in De Baca County and the highest unemployment rate was 6.2 percent in Curry County.

Tables found in the baseline employment section of ETR-3B present historical data on population, labor force, employment, and unemployment for the seven New Mexico ROI counties. These data indicate that growth in labor force and employment in the ROI was sporadic from 1968 through 1980. Of the ROI counties, labor force and employment growth were most rapid in Chaves County during 1968 to 1980. Employment on a labor force basis in Chaves County expanded at an average annual rate of 3.2 percent from 1970 to 1980. Curry County employment grew at an average annual rate of 2.6 percent from 1968 through 1978, but fell 2.9 percent annually from 1978 through 1980. Employment in De Baca County grew more slowly--at 2.0 percent annually from 1970 through 1980. In Harding County, no significant employment trend is observable. The number of employed persons has fluctuated from a low of 475 in 1970 to a high of 670 in 1978, falling back to 540 jobs in 1980. Quay County's employment grew at an average rate of 2.7 percent per year from 1969 through 1977, but has shown virtually no growth since then. Employment in Roosevelt County grew at a rate of 2.6 percent per year from 1968 through 1974 but since has fluctuated around its 1974 level of 7,000 jobs. In Union County, the 1980s employment level was nearly the same as 1968--about 2,000 jobs.

In all 7 New Mexico ROI counties, 1980 unemployment rates are representative of average unemployment rates for the 1975 to 1980 period. The number of unemployed workers in the ROI was the highest in 1975 when 2,500 people were out of work in Chaves and Curry counties. Unemployment levels were only slightly lower in 1976 and 1977 in these counties.

Through the first five months of 1981, unemployment rates were significantly higher in Chaves, Curry, and Quay counties compared to their 1980 levels. The Chaves County unemployment rate increased from 5.5 to 6.3 percent, the Curry County unemployment rate increased from 6.2 percent to 6.5 percent, and the Quay County unemployment rate increased from 5.4 percent to 7.3 percent. For the first five months of 1981, unemployment rates in De Baca, Harding and Roosevelt counties were less than their 1980 levels. The unemployment rate fell in De Baca County from 3.1 percent to 2.0 percent, in Harding County from 4.4 percent to 3.2 percent, and in Roosevelt County from 3.6 to 3.4 percent. At the same time, employment and labor force levels fell in all three of these counties, indicating that the decline in the unemployment rate was due to workers leaving the labor force rather than taking new jobs. In Union County, the unemployment rate fell slightly

Table 2.1.2.2-2. New Mexico civilian labor force, employment, unemployment, and unemployment rate, by place of residence, 1980.

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Chaves	20,986	19,831	1,155	5.5
Curry	14,370	13,475	895	6.2
DeBaca	1,052	1,019	33	3.1
Harding	565	540	25	4.4
Quay	5,171	4,892	279	5.4
Roosevelt	1,267	7,005	262	3.6
Union	1,058	1,971	87	4.2
New Mexico ROI	51,469	48,733	2,736	5.3
Rest of State	490,531	453,267	37,264	7.6
State Total	542,000	402,000	40,000	7.4
United States	104,719,000	97,270,000	7,448,000	7.1

T4999/6-29-81

Source: New Mexico Employment Security Department, 1981; Economic Report of the President, 1981.

from 4.2 to 3.9 percent, while employment and labor force levels actually rose. Thus, only Union County in the New Mexico ROI experienced an improved employment situation in the first five months of 1981 compared to the 1980 annual average.

### **Sectoral Employment Trends (2.1.2.3)**

#### **Texas (2.1.2.3.1)**

Figure 2.1.2.3-1 presents 1979 employment shares by industrial sector for Texas and the United States. Table 2.1.2.3-1 presents employment data by industrial sector from 1974 through 1979 for Texas. Analogous data for the United States are presented in the Nevada/Utah regional environment discussion in Table 2.1.1.3-1. Fluctuations in total employment by place of employment between 1974 and 1979 for the Texas ROI counties and the annual average growth rates during that period are shown in Table 2.1.2.3-2. Detailed data tables comparable to Table 2.1.2.3-1 presenting employment by industrial sector from 1967 through 1979 for Texas and the Texas ROI counties can be found in the baseline employment sections of ETR-3B. The data are taken from the Regional Economic Information System (REIS) of the Bureau of Economic Analysis, U.S. Department of Commerce, though the original source for much of the data is the Texas Employment Security Commission. They represent the most comprehensive employment data available to describe the ROI economy. (For an explanation of the REIS data, see Section 2.1.1.3.1)

Total establishment based employment in Texas increased at an average annual rate of 4.2 percent from 1974 through 1979, well above the U.S. average of 2.3 percent per year. Wage and salary employment is the principal component of this job growth. The total number of proprietors grew more slowly than the state average, and the number of farm proprietors declined from 1974 through 1979.

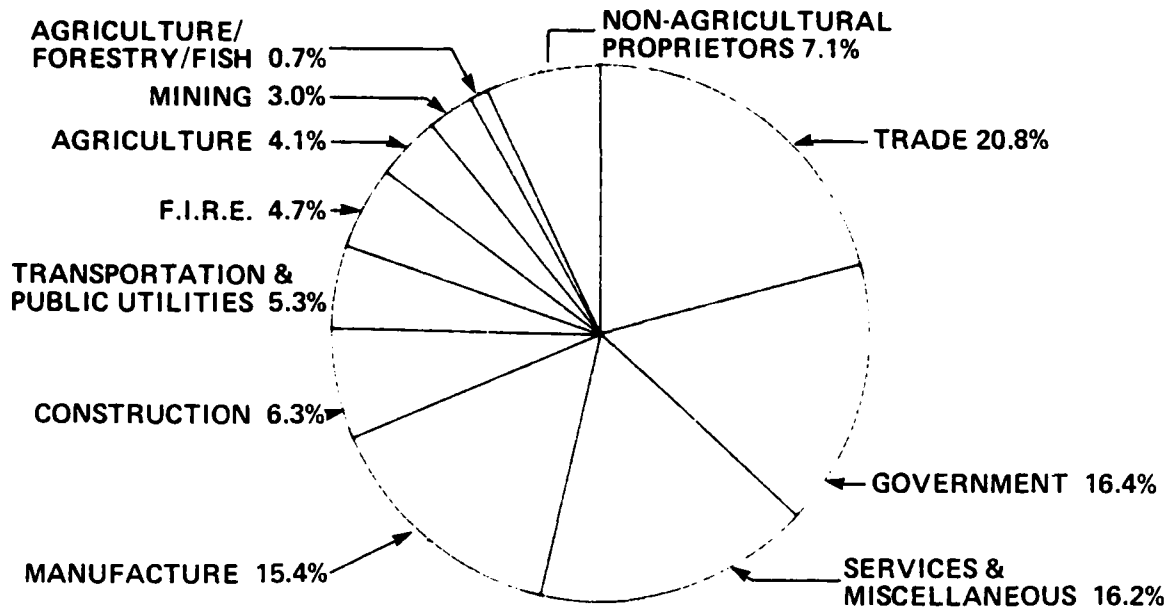
Mining was the leading growth sector from 1974 through 1979, because of expanding oil and gas production. Mining employment grew at an average annual rate of 10.9 percent from 1974 through 1979, compared to the U.S. annual rate of 6.6 percent. As a result, by 1979 more than 20 percent of all the mining jobs in the United States were in Texas.

Manufacturing is the other major sector in the Texas economy. Manufacturing employment grew at an average annual rate of 4.2 percent from 1974 through 1979--the same rate as the state as a whole. By comparison, manufacturing employment in the U.S. increased at an average annual rate of 1.0 percent during 1974-1979. Service sector employment in Texas increased only slightly faster than the U.S. average--4.7 for the state compared to 4.2 percent for the United States as a whole. Government sector employment increased slowly in the state during the latter 1970s. Federal civilian employment stayed constant at about 163,000 jobs during the period, while federal military employment mirrored a nationwide decline. State and local government employment, however, offset the decline in federal jobs, increasing at an average annual rate of 3.4 percent--almost twice the national rate of 1.8 percent per year.

Texas was only moderately affected by the recession of 1974 to 1975. Employment in the state increased by only 1.8 percent from 1974 to 1975, well

## TEXAS

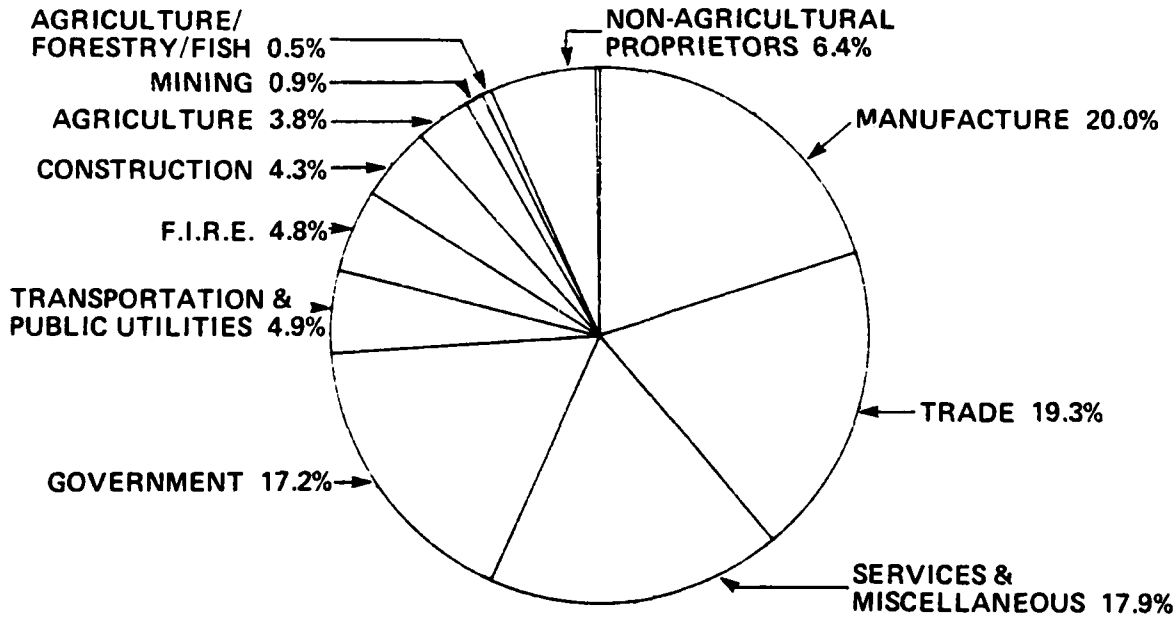
1979 TOTAL EMPLOYMENT = 6,624,715



CA-0431-A

## UNITED STATES

1979 TOTAL EMPLOYMENT = 105,452,000



Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

CA-0430-A

Figure 2.1.2.3-1. Employment by type and broad industrial sources, Texas and the United States, 1979.

TABLE 2.1.2.3-1. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

TEXAS	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	5386439	5483003	5729391	6005331	6331706	6624715
NUMBER OF PROPRIETORS	603231	606223	610009	636634	654756	672937
FARM PROPRIETORS	214915	210720	206000	206363	200410	194943
NON-FARM PROPRIETORS	388316	395503	404009	430271	454346	477894
TOTAL WAGE AND SALARY EMPLOYMENT	4783208	4876780	5119382	5368697	5676950	5951878
FARM	84000	82000	83900	84000	83000	79400
NON-FARM	4699208	4794780	5035482	5284697	5593950	5872478
PRIVATE	3703585	3775098	3986120	4214471	4511181	4786009
AG. SERV., FOR, FISH., AND OTHER	20469	23659	28254	32863	39853	45147
MINING	119403	132214	137703	153459	181372	200511
CONSTRUCTION	290695	292532	321025	347497	384768	418040
MANUFACTURING	830238	809659	854119	900029	960045	1017628
NON-DURABLE GOODS	366912	362729	384337	400607	412248	420164
DURABLE GOODS	463326	446930	469782	499422	547797	597164
TRANSPORTATION AND PUBLIC UTILITIES	294758	292219	293705	311213	327805	349228
WHOLESALE TRADE	293747	318104	339572	350273	373109	397131
RETAIL TRADE	757794	773879	828754	870234	925831	977563
FINANCE, INSURANCE, AND REAL ESTATE	245871	244929	253111	272283	291120	310797
SERVICES	850610	887903	929877	976620	1027278	1069964
GOVERNMENT AND GOVERNMENT ENTERPRISES	995623	1019682	1049362	1070226	1082769	1086469
FEDERAL, CIVILIAN	163057	163763	162729	162251	162451	163152
FEDERAL, MILITARY	202708	197755	197310	188760	185668	180422
STATE AND LOCAL	629858	658164	689323	719215	734650	742895

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.2.3-2. Total employment by place of employment and average annual growth rate, Texas ROI, 1974-1979.

County	1974	1975	1976	1977	1978	1979	1974-1979 Average Annual Growth Rate
Bailey	3,504	3,484	3,494	3,634	3,832	3,950	2.4
Castro	4,724	4,782	4,990	5,014	5,068	5,158	1.3
Cochran	2,038	2,105	2,096	2,192	2,210	2,222	1.7
Dallam	3,462	3,429	3,503	3,861	3,906	3,787	1.8
Deaf Smith	8,532	8,793	9,588	9,894	9,816	9,774	2.8
Hale	15,311	15,156	15,566	16,155	16,814	17,083	2.2
Hartley	1,453	1,358	1,378	1,458	1,474	1,470	0.2
Hockley	7,343	7,594	7,844	8,454	9,026	9,167	4.5
Lamb	6,541	6,588	7,327	7,641	7,919	7,905	3.9
Lubbock	87,666	87,726	92,360	99,891	103,540	102,502	3.2
Moore	6,465	6,309	7,003	7,647	7,867	7,975	4.3
Oldham	1,027	1,152	1,182	1,208	1,278	1,255	4.1
Parmer	5,593	5,571	5,671	5,831	6,045	6,335	2.5
Potter	57,546	59,872	62,399	64,935	66,846	69,628	3.9
Randall	12,958	13,553	14,411	13,774	15,191	15,536	3.7
Sherman	2,447	2,287	2,213	2,213	2,149	2,165	-2.4
Swisher	4,806	4,803	4,850	4,943	4,924	4,880	0.3
Texas ROI	231,416	234,562	245,875	258,745	267,905	270,792	3.2
Rest of State	5,155,023	5,248,441	5,483,516	5,746,586	6,063,801	6,353,923	4.3
State Total	5,386,439	5,483,003	5,729,391	6,005,331	6,331,706	6,624,715	4.2
United States	93,905,324	92,330,800	94,737,000	98,125,000	102,287,000	105,452,000	2.3

T5525/10-2-81

Source: U. S. Department of Commerce, 1981.

below the average annual rate of increase for 1974-1979 of 4.2 percent per year. Employment in the nation as a whole, however, declined 1.7 percent in the 1974 to 1975 recession, with many areas hit much harder than Texas.

Ten of the 17 ROI counties exhibited a significant upward trend in total employment from 1974 to 1979 using the establishment-based REIS data. These 10 counties all had greater average annual employment growth rates than the national average during that period. The 10 counties, with their growth rates are: Bailey (2.4 percent), Deaf Smith (2.8 percent), Hockley (4.5 percent), Lamb (3.9 percent), Lubbock (3.2 percent), Moore (4.3 percent), Oldham (4.2 percent), Parmer (2.5 percent), Potter (3.9 percent), and Randall (3.7 percent). Hartley and Swisher counties exhibited no significant employment trend during 1974-1979, while Sherman County experienced a significant decline. In Castro, Cochran, Dallam and Hale counties, employment growth was slightly slower than the national pace.

The growth indicated by establishment-based data differs from that indicated by labor force-based data, though both originate with the Texas Employment Security Commission. The establishment-based data generally show a stronger growth trend than the labor force-based data. Many counties which show no observable growth trend in the labor force data appear to have experienced significant growth according to establishment-based data. Differences may be due to increases or decreases in the number of multiple job holders, which would show in the establishment data but not in the labor force data.

Table 2.1.1.3-1 (presented previously in the Nevada/Utah regional analysis) and Table 2.1.2.3-1 indicate that Texas and the United States have very similar employment breakdowns by sector, except that the manufacturing sector in Texas is smaller than the U.S. average. In 1979, the proprietary share of total employment was 9.1 and 10.2 percent for the United States and Texas, respectively. The major U.S. employment sectors in 1979 were manufacturing, comprising 20.0 percent of the total number of jobs, wholesale and retail trade, comprising 19.3 percent, and services and government with 17.9 and 17.2 percent respectively. In Texas, wholesale and retail trade were the leading employment sectors in 1979, accounting for 20.8 percent of total employment. Government and services had shares of 16.4 and 16.2 percent, respectively, and manufacturing 15.4 percent. The mining employment share in Texas is three times the national mining share, due mainly to oil and natural gas production.

Most of the ROI county economies largely depend on agricultural employment. In 1979, agricultural employment (including proprietors and wage and salary jobs) provided 3.8 of total employment in the United States, and 4.1 percent in Texas. In all but three (Lubbock, Potter, and Randall) of the 17 ROI counties, agricultural employment shares in 1979 were well above 10 percent and frequently were more than 30 percent. Agriculture was the largest employment sector in 11 of the ROI counties.

Sectoral employment breakdowns for Dallam, Hartley, and Moore counties are discussed in detail in Section 2.1.3.7.3. The following list ranks the leading employment sectors in 1979 by county and indicates the employment share for each (agricultural employment includes both proprietors and wage and salary jobs):



- o Bailey: agriculture (30.8 percent), services (10.4), government (9.6), retail trade (9.2), and manufacturing (8.9);
- o Castro: agriculture (41.5 percent), government (10.6), services (6.5), retail trade (6.1), and manufacturing (4.6);
- o Cochran: agriculture (39.2 percent), government (16.3), services (8.3), retail trade (4.8), and manufacturing (4.2);
- o Dallam: agriculture (26.0 percent), wholesale and retail trade (17.6), services (10.4), government (8.6), manufacturing (6.7);
- o Deaf Smith: agriculture (24.1 percent), wholesale and retail trade (17.6), manufacturing (12.8), government (11.7), and services (8.2);
- o Hale: wholesale and retail trade (19.2 percent), agriculture (16.8), services (13.9), government (13.0), and manufacturing (11.2);
- o Hartley: agriculture (57.9 percent), government (11.2), services (10.4), and wholesale and retail trade (7.9);
- o Hockley: mining (17.9 percent), agriculture (17.1), government (15.1), wholesale and retail trade (13.5), and services (9.9);
- o Lamb: agriculture (26.6 percent), wholesale and retail trade (14.7), government (11.3), manufacturing (10.3), services (9.7), and mining (7.4);
- o Lubbock: wholesale and retail trade (25.0 percent), government (20.2), services (16.8), and manufacturing (12.4);
- o Moore: manufacturing (20.7 percent), wholesale and retail trade (14.5), agriculture (13.3), government (10.8), and transportation and public utilities (9.2);
- o Oldham: agriculture (33.5 percent), government (16.7), services (12.7), and wholesale and retail trade (12.6);
- o Parmer: agriculture (39.3 percent), manufacturing (17.0), government (9.2), services (6.3), and retail trade (4.1);
- o Potter: wholesale and retail trade (25.9 percent), services (18.0), government (14.1), manufacturing (12.0), and transportation and public utilities (9.7);
- o Randall: wholesale and retail trade (30.5 percent), government (16.7), services (10.2), agriculture (8.2), construction (7.6), and manufacturing (7.5);
- o Sherman: agriculture (51.3 percent), wholesale and retail trade (14.7), and government (11.0); and

- o Swisher: agriculture (35.4 percent), government (11.9), services (8.8), and retail trade (8.6).

All ROI counties experienced decreases in agricultural employment between 1974 and 1979 similar to state and national trends. A number of ROI counties experienced declines in other major sectors as well. Chief among these are:

- o Bailey: retail trade and government;
- o Castro: retail trade, services, and government;
- o Cochran: retail trade;
- o Dallam: government;
- o Hartley: wholesale and retail trade;
- o Oldham: services;
- o Parmer: retail trade;
- o Randall: government;
- o Sherman: wholesale and retail trade; and
- o Swisher: retail trade and government.

Table 2.1.2.3-3 shows the most recent average annual wage and salary employment data available from the Texas Employment Commission (TEC). Since TEC uses a different classification for industrial sectors, these data are not strictly comparable to either the previously discussed BEA, REIS data, or wage and salary employment estimates from other states' employment agencies. This table does, however, indicate the latest trend decline or increase in the broad industrial sectors. Total wage and salary employment in Texas has increased by 4.6 percent between 1979 and 1980 due to large employment increases in nearly all of the sectors. Mining and government had the largest percentage gains in 1980 over the 1979 employment levels. The large mining employment increase is most likely due to expanded oil and gas production in Texas.

#### New Mexico (2.1.2.3.2)

Figure 2.1.2.3-2 presents 1979 employment by industrial sector for Texas and the United States. Table 2.1.2.3-4 presents employment by industrial sector from 1974 to 1979 for New Mexico. Total employment by place of employment between 1974 and 1979 for the New Mexico ROI counties, and the annual average growth rates during that period are shown in Table 2.1.2.3-5. Detailed data tables, analogous to Tables 2.1.2.3-1 and 2.1.2.3-4 presenting employment by industrial sector from 1967 through 1979 for New Mexico and the New Mexico ROI counties, are located in the baseline employment sections of ETR-3C. New Mexico has experienced employment increases over the 6-year period in all major industrial sectors including agriculture. Total employment in New Mexico increased at an average annual rate of 4.3 percent from 1974 through 1979. This rate is well above the U.S. average employment growth rate of 2.3 percent per year for the same period, and equivalent to the Texas growth rate of 4.2 percent per year. Most of this growth occurred in wage and salary employment--with average increases of 4.4 percent per year. The New Mexico economy was only slightly affected by the nationwide recession of 1974 to 1975. The effect was simply to cut the employment growth rate to one-half of its average 1974 to 1979 value to 2.1 percent from 1974 to 1975, compared to the 1974 to 1979 average of 4.3 percent.

Table 2.1.2.3-3. Wage and salary employment by industrial sector, Texas, 1979 and 1980 annual averages.

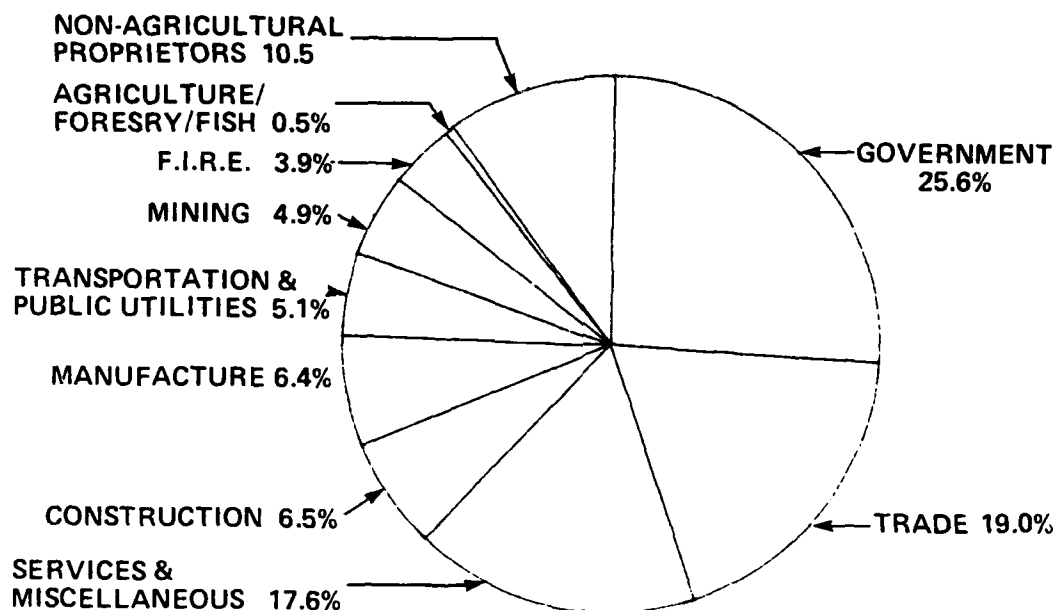
Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	5,496,438	5,751,769	4.6
Agriculture, Forestry and Fishing	53,309	56,174	5.4
Mining	202,665	240,747	18.8
Construction	417,925	421,215	0.7
Manufacturing	1,019,064	1,053,213	3.4
Transportation, Communication and Public Utilities	320,079	332,544	3.9
Trade	1,375,071	1,438,828	4.6
Finance, Insurance and Real Estate	301,563	320,777	6.4
Services and Miscellaneous	866,889	929,030	7.2
Government	873,788	1,005,377	15.1

T5638/8-25-81

Source: Texas Employment Commission, 1980; 1981.

## NEW MEXICO

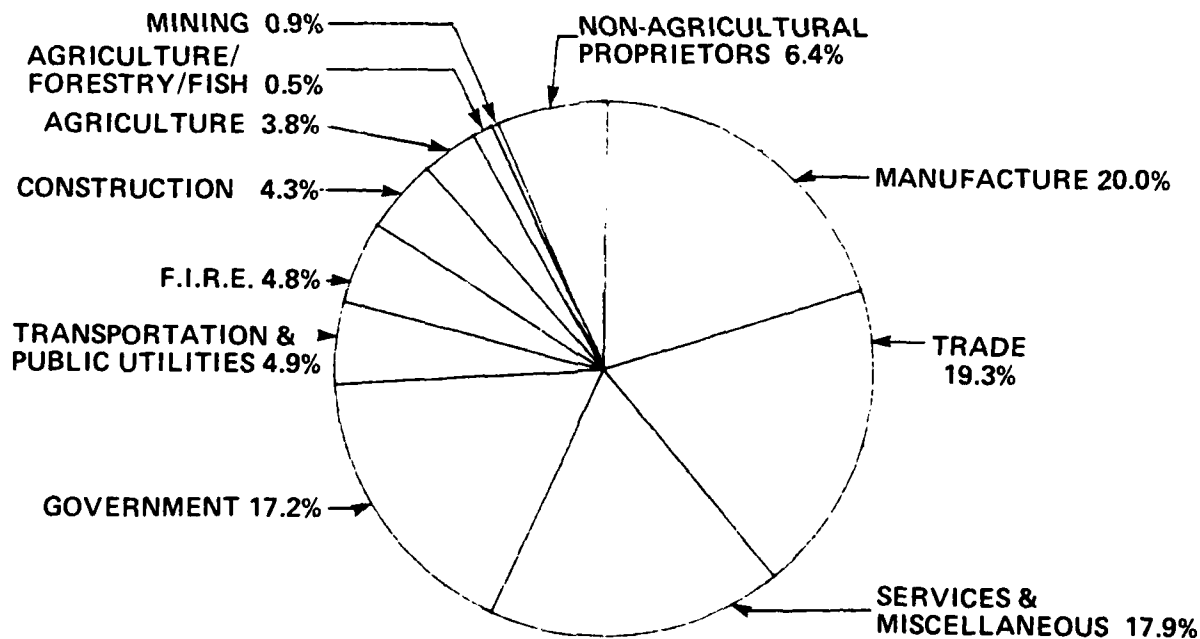
1979 TOTAL EMPLOYMENT = 547,329



CA-0432-A

## UNITED STATES

1979 TOTAL EMPLOYMENT = 105,452,000



Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

CA-0430-A

Figure 2.1.2.3-2. Employment by type and broad industrial sources, New Mexico and the United States, 1979.

TABLE 2.1.2.3-4. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

NEW MEXICO	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	444174	453562	475383	501003	524962	547329
NUMBER OF PROPRIETORS	41200	41355	42138	44847	45736	46880
FARM PROPRIETORS	12527	12241	12375	13085	12636	12390
NON-FARM PROPRIETORS	28673	29114	29763	31762	33100	34490
TOTAL WAGE AND SALARY EMPLOYMENT	402974	412207	433245	456156	479226	500449
FARM	7700	8000	8000	8000	8200	10300
NON-FARM	395274	404207	425245	448156	471026	490149
PRIVATE	267959	274165	291637	312820	333720	349938
AG. SERV., FOR., FISH., AND OTHER	2061	1812	1981	2244	2483	2808
MINING	18424	20024	21289	23235	24179	26874
CONSTRUCTION	25279	25197	26058	30702	34974	35590
MANUFACTURING	29274	28525	30266	32175	33382	34792
NON-DURABLE GOODS	11996	11600	12494	13458	13967	14378
DURABLE GOODS	17278	16925	17772	18717	19415	20414
TRANSPORTATION AND PUBLIC UTILITIES	23032	22910	23510	24564	26346	27921
WHOLESALE TRADE	14414	16795	17638	18764	20099	21394
RETAIL TRADE	65433	66810	72824	76744	81190	82768
FINANCE, INSURANCE, AND REAL ESTATE	16749	16633	17219	18342	19895	21284
SERVICES	73293	75459	80852	86050	91172	96507
GOVERNMENT AND GOVERNMENT ENTERPRISES	127315	130042	133608	135336	137306	140211
FEDERAL, CIVILIAN	28767	29126	29227	29159	29212	29357
FEDERAL, MILITARY	22723	22301	22314	21702	21994	22044
STATE AND LOCAL	75825	78615	82067	84475	86100	88810

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.2.3-5. Total employment by place of employment and average annual growth rate, New Mexico ROI, 1974-1979.

County	1974	1975	1976	1977	1978	1979	1974-1979 Average Annual Growth Rate
Chaves	17,710	18,241	18,600	19,076	19,655	20,915	3.4
Curry	18,638	18,047	18,012	18,065	18,496	18,381	-0.3
DeBaca	953	884	927	927	934	948	-0.2
Harding	652	646	665	630	639	664	0.4
Quay	4,640	4,700	4,807	4,704	4,740	4,923	1.2
Roosevelt	6,098	6,101	6,291	5,776	5,849	6,088	0.0
Union	2,144	2,125	2,192	2,073	2,206	2,223	0.7
New Mexico ROI	50,840	50,744	51,494	51,251	52,519	54,142	1.3
Rest of State	393,334	402,818	423,889	449,752	472,443	493,187	4.6
State Total	444,174	453,562	475,383	501,003	524,962	547,329	4.3
United States	93,905,324	92,330,800	94,737,000	98,125,000	102,287,000	105,452,000	2.3

T5526/10-2-81

Source: U. S. Department of Commerce, 1981.

As in Texas, mining was the leading growth sector during 1974 to 1979. Mining employment expanded at an average annual rate of 7.8 percent, compared to 6.6 percent nationwide. Manufacturing employment in New Mexico grew at an average annual rate of 3.5 percent, slightly slower than the 4.2 percent in Texas, but well above the U.S. average of 1.0 percent. Service employment for the state of New Mexico increased at an average annual rate of 5.7 percent during 1974 to 1979, compared to 4.2 percent for the nation as a whole. Consistent with New Mexico's rapid growth, construction employment in the state expanded at an average annual rate of 7.1 percent during 1974 to 1979. As in Texas, state and local government employment grew more rapidly than the U.S. average--3.2 percent per year in New Mexico, compared to 1.8 percent throughout the United States.

The wholesale and retail employment share in 1979 was 19.0 percent. The services sector was 17.6 percent. Both shares were similar to the national shares that year. The government sector has the largest share of New Mexico jobs--25.6 percent in 1979. This compares to the national employment share of 17.2 percent. At the national level, one out of every five jobs is in the manufacturing sector, while in New Mexico only 6.4 percent, or about one in every 16 jobs are in manufacturing. The state mining employment share is 5 times the national share. Most of New Mexico's recent growth occurred outside the 7-county ROI. Only Chaves County experienced a significant growth trend during 1974 to 1979. Total employment in Chaves County grew at an average annual rate of 3.4 percent during this period. The remaining ROI counties experienced no significant growth trends during the latter half of the 1970s. Other than Chaves County, only Quay County finished the period with total employment significantly above 1974 level, and most of this increase occurred from 1978 to 1979.

All of the ROI counties are heavily dependent on employment in the agriculture, government and trade industries. Agriculture is the leading employment sector in 4 of the 7 ROI counties and provides between one quarter and one half of the total number of jobs in those counties.

The number of farm proprietors has decreased between 1974 and 1979 in all of the ROI counties and in the state as a whole. However, an increase in the number of wage and salary jobs--primarily from 1978 to 1979--outweighed the proprietary farm employment loss and brought agricultural employment levels up in the state and ROI counties over this period.

The government sector is the leading employment sector in Curry County with a 35 percent share of total employment in 1979. This is because several thousand military personnel are stationed at Cannon Air Force Base. The government sector provides between 15 and 25 percent of the total number of jobs in the other ROI counties but employment levels have decreased in all but Chaves County.

The trade sector is the leading employment sector in Quay and Chaves counties, providing about one of every five jobs. Employment in the trade sector decreased in De Baca and Harding counties during the 1974 to 1979 period. Significant employment losses also occurred in services and manufacturing in Curry County.

For each of the New Mexico ROI counties, the leading sectoral employment shares are as follows:

- o Chaves: wholesale and retail trade (20.0 percent), government (18.8), manufacturing (12.6), agriculture (9.9), and construction (5.0).
- o Curry: government (35.4 percent), wholesale and retail trade (20.2), services (10.6), transportation and public utilities (6.6), agriculture (6.0), and manufacturing (5.1).
- o De Baca: agriculture (31.1 percent), government (20.7), retail trade (11.5), and services (8.0).
- o Harding: agriculture (50.6 percent), government (16.0), and manufacturing (11.4).
- o Quay: wholesale and retail trade (19.8 percent), agriculture (19.2), government (16.8), services (13.2), and manufacturing (8.0).
- o Roosevelt: agriculture (25.1 percent), government (24.1), wholesale and retail trade (17.1), and services (6.7).
- o Union: agriculture (32.2 percent), government (17.8), services (12.0), wholesale and retail trade (11.8), and manufacturing (5.3).

Employment and labor force conditions in Curry and Roosevelt counties are discussed in Section 2.1.3.6 of this ETR.

Table 2.1.2.3-6 shows that latest average annual nonagricultural wage and salary employment estimates released by the New Mexico Employment Security Department (NMESD). These data are not strictly comparable to either the BEA/REIS data or wage and salary employment estimates from other states' employment agencies since NMESD uses different classifications for industrial sectors. These tables do however, indicate the most recent employment declines and increases in the broad industrial sectors. Construction employment dropped in 1980 by over 17 percent from the 1979 level. During the same period mining and government employment increased by 8.9 and 3.3 percent. There was only a slight increase in the total number of wage and salary jobs in New Mexico between 1979 and 1980.

#### **Projected Labor Force, Employment, and Unemployment Without M-X (2.1.2.4)**

##### **Baseline Projections (2.1.2.4.1)**

Employment is projected for each ROI county on the basis of widely used population projections, and labor force and unemployment rate data published by the Texas Employment Commission and the New Mexico Department of Employment Security. This procedure is the same used in projecting employment for the Nevada/Utah region (see Section 2.1.1.4.1).

Table 2.1.2.4-1 displays the labor force participation rates and unemployment rates used in making these projections.

Table 2.1.2.4-2 presents the baseline employment forecasts, by place of residence, for the counties in the Texas/New Mexico ROI. These projections, an



Table 2.1.2.3-6. Nonagricultural wage and salary employment by industrial sector, New Mexico, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	461,000	462,300	0.3
Mining	27,100	29,500	8.9
Construction	35,600	30,200	-17.3
Manufacturing	34,800	34,300	-1.4
Transportation, Communication and Public Utilities	28,100	28,400	1.1
Trade	104,100	103,100	-1.1
Finance, Insurance and Real Estate	21,200	21,000	-0.9
Services and Miscellaneous	89,600	91,300	1.9
Government	120,500	124,500	3.3

T5643/9-23-81/F

Source: New Mexico Employment Security Department, 1980; 1981.

Table 2.1.2.4-1. Baseline labor force participation rate and unemployment rate projections, Texas/New Mexico ROI (percent).

County	Labor Force Participation Rate	Unemployment Rate
Bailey	42.2	3.5
Castro	37.5	4.2
Chaves	39.4	6.0
Cochran	41.0	4.1
Curry	34.9	6.0
Dallam	35.5	3.5
Deaf Smith	41.9	4.8
DeBaca	39.8	3.1
Hale	43.0	4.3
Harding	52.8	3.6
Hartley	32.6	2.6
Hockley	42.3	3.3
Lamb	41.9	3.6
Lubbock	47.0	3.8
Moore	46.8	4.0
Oldham	32.3	3.3
Parmer	42.5	3.3
Potter/Randall	51.3	3.7
Quay	45.9	5.8
Roosevelt	43.0	3.9
Sherman	42.1	3.7
Swisher	44.1	3.5
Union	45.8	4.2
Texas/New Mexico ROI <sup>1</sup>	45.4	4.1

T5527/9-11-81

<sup>1</sup> Regional average is weighted by the size of the labor force and number of unemployed in each county.

Sources: HDR Sciences calculations, based on data from Texas Employment Commission and New Mexico Employment Security Department.

Note: Projections are averages for 1975-80. Earlier years were excluded because of secular changes in the demographic composition of the labor force which became most noticeable since the early 1970s.

Table 2.1.2.4-2.

TREND-GROWTH BASELINE EMPLOYMENT PROJECTIONS, TEXAS/NEW MEXICO ROI, 1982-1994.

COUNTY	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
BAILEY	3392	3400	3409	3421	3423	3433	3441	3449	3457	3462	3462	3462	3462
CASTRO	3991	4013	4034	4060	4078	4099	4121	4142	4167	4183	4207	4228	4250
CHAVES	19803	20122	20448	20777	21070	21370	21674	21981	22292	22570	22848	23129	23414
COCHRAN	2043	2045	2045	2045	2045	2045	2045	2045	2045	2056	2072	2088	2104
CURRY	14392	14438	14484	14530	14536	14543	14550	14556	14566	14536	14510	14484	14458
DALLAM	2347	2374	2402	2432	2456	2484	2511	2539	2569	2607	2648	2689	2730
DEAF SMITH	8452	8532	8612	8696	8772	8851	8931	9011	9091	9178	9266	9354	9442
DE BACA	1003	1003	1003	1003	991	983	976	968	964	964	964	964	964
HALE	15670	15835	16004	16172	16341	16510	16683	16860	17032	17251	17469	17691	17917
HARDING	534	524	514	509	494	484	473	463	453	433	412	392	372
HARTLEY	1159	1184	1210	1235	1261	1286	1311	1337	1362	1388	1413	1438	1464
HOCKLEY	8987	9044	9101	9163	9224	9289	9355	9420	9490	9543	9600	9658	9715
LAMB	7129	7121	7113	7109	7109	7109	7109	7109	7109	7097	7089	7081	7073
LUBBOCK	99579	100999	102441	103897	105082	106280	107492	108717	109956	111204	112463	113740	115029
MOORE	6564	6591	6618	6649	6681	6717	6753	6789	6825	6870	6914	6959	7004
OLDHAM	853	859	865	871	884	896	909	921	937	953	971	990	1009
PARMER	4233	4233	4233	4233	4237	4245	4254	4262	4274	4303	4336	4369	4402
POTTER/RANDALL	82304	83311	84334	85367	86360	87362	88380	89413	90455	91542	92643	93760	94891
QUAY	4856	4864	4873	4882	4873	4864	4856	4847	4843	4821	4804	4786	4769
ROOSEVELT	6864	6889	6913	6942	6971	7004	7037	7070	7108	7137	7170	7203	7236
SHERMAN	1553	1561	1569	1577	1585	1593	1601	1610	1622	1634	1650	1666	1683
SWISHER	4498	4515	4532	4554	4583	4617	4651	4686	4720	4771	4822	4873	4924
UNION	2128	2119	2111	2106	2111	2119	2128	2137	2150	2150	2150	2150	2150

DEPLOYMENT REGION 302335 305576 308666 312229 315166 318185 321239 324329 327485 330652 333884 337153 340459

SOURCE: HDR SCIENCES, BASED ON POPULATION, LABOR FORCE, AND UNEMPLOYMENT DATA FROM STATE SOURCES.

CT

extrapolation of employment growth trends over the 1967-1977 period, indicate modest employment growth through 1994. Over the 1982-1994 period, regional employment is forecast to increase by about 39,000 jobs, to 343,000 jobs in 1994. This represents average annual growth of 1.0 percent.

From 1982-1994, Texas's share of the total is forecast to increase slightly, from 83.9 percent of total ROI employment in 1982 to 84.7 percent by 1994. As indicated in the table, not all counties are projected to grow. Lamb, De Baca, Harding, and Quay counties are all forecast to experience minor employment loss. On the other hand, the counties of Lubbock, Potter, and Randall, with well developed economies, are forecast for slightly more rapid growth.

Trend growth projections include some industrial expansion but sizeable energy projects, would require adjustment of these projections. Many energy-related projects are slated for the region during the forecast period. However, virtually all will be too small or short-term to significantly alter the trend-growth projections in Table 2.1.2.4-2.

#### Major Non-M-X Developments in the Texas/New Mexico ROI (2.1.2.4.2)

The more important future projects in the region are discussed below. Employment requirements are compared to projected available labor. Where necessary, projected labor in-migration is estimated.

##### o Tolk 1 and Tolk 2 Power Plants

The Southwestern Public Service Company is planning and building two large coal-fired electrical generating units in Lamb County, Texas. Each will have the capacity to produce 543 MW of electricity, at a cost of \$220 million for each plant.

Construction of Tolk 1 is underway, and the unit should be completed in mid-1982. Construction of Tolk 1 was expected to require a peak of 650 workers in the spring of 1981. Construction of Tolk 2 will begin in 1982 and be completed in 1985. The Tolk 2 plant will require a peak of 650 construction workers.

The build-up of operations personnel for Tolk 1 began in October 1980. By late 1981, 100 to 120 persons will be required. Some operations personnel for Tolk 2 will start work in the fall of 1983, with employment building to 30 by 1985. The total operating staff for both plants is expected to be 130-150 people.

According to the manager of plant construction, few of the construction workers currently employed on Tolk 1 have their families near the site. Instead, most commute from their homes in Amarillo, Lubbock, Clovis, and elsewhere in the region. This pattern is likely to continue for construction of Tolk 2. Operations personnel probably would relocate to communities nearer the site, though their numbers are small.

Of the peak employment of 650 jobs, this analysis assumes that 100 would be filled by persons in Lamb County. If each of these direct jobs induces 0.5 indirect jobs in the county, the total employment impact in Lamb County would be 150 workers. The rest of the project's employment effects would be dispersed so widely over the region that no significant impacts in any single area are anticipated.

The Texas State Water Board's projected population of Lamb County during the 1980-1985 period is a constant 17,400 persons. Assuming a continuation of 1975-1978 labor force participation and unemployment (an average participation rate of 42.8 percent and unemployment of 4.3 percent), projected employment (on a labor force basis) would total 7,100 persons. Peak project employment of 150 persons represents 2 percent of this baseline projection. Most of the jobs created by the power plants could be filled by current residents of Lamb County projected to be unemployed, though some in-migration is likely because of mismatches between the occupational demands of the project and the skills of local-area residents.

To account for these small levels of project-induced in-migration, the "high growth" baseline for Lamb County is assumed to be 17,500 through 1995, compared to 17,300-17,400 projected by the trend-growth baseline.

o Interstate 27

The Texas Department of Highways and Public Transportation is planning major improvements to Interstate 27 over a 115-mi stretch from Amarillo to Lubbock. The project is broken into two sub-projects, with the 24-mi section north of Swisher County managed from the Amarillo office and the remaining 91-mi portion managed from the Lubbock office. Both sections now are under construction, with approximately 100 workers employed on the Amarillo portion and 200 workers on the Lubbock section. This work force of 300 persons is expected to continue through 1986 and to decline thereafter, with completion anticipated in 1988-1989. The project will not require significant numbers of operations personnel. These labor demands are extremely small compared to the size of the labor force so no adjustments are made to the baseline projections.

o Amoco CO<sub>2</sub> Pipeline

The Amoco pipeline project is designed to bring CO<sub>2</sub> from wells in Colorado to the Texas/New Mexico area. It would traverse Union, Harding, Quay, Curry, and Roosevelt counties in the M-X deployment region. The CO<sub>2</sub> delivered by the pipeline would be used for tertiary recovery of crude oil, a process that has been tested on an experimental basis but not yet applied commercially. The Amoco project will cost approximately \$300 million. Construction of the pipeline is expected to require approximately 6 months, and probably would start in the last quarter of 1983. The project would require two crews of 300 workers each, laying 15,000 feet of pipe daily for seven months to complete the planned 400-mile pipeline. Assuming an employment multiplier of 1.75 for the region, the project's 600 direct jobs would generate 450 indirect jobs, for a total employment impact of 1,050 jobs.

Baseline population projections from the University of New Mexico's Bureau of Business and Economic Research indicate a population for the five-county area of 78,000 during this period. Projecting the region's 1975-78 average labor force participation rate of 39 percent and unemployment rate of 5 percent, baseline employment (labor force basis) in the five-county area would be about 29,000 persons in 1984. Project-related employment of 1,050 jobs represents 3.6 percent of this baseline projection.

Since much of the project is located within long commuting distance of Amarillo and Lubbock, many of the project's employees would live in these metropolitan areas. If half of the 600 direct employees commute, a total of 750 jobs (1,050 less one-half of 600) would be filled by residents of the five-county area. Assuming that 250 of these 750 local jobs are filled by area workers who otherwise would be unemployed, the remaining 500 jobs would be filled by in-migrants to the area. If the ratio of population to employment for these in-migrating workers is 2.3 (the U.S. average for 1979), the population of the five-county area would increase by 1,150 persons during 1983 to 1984. This represents 1.5 percent of the area's baseline population. The population of each of the five counties traversed by the pipeline is projected to increase by 1.5 percent above the baseline projection during 1983 and 1984.

o Shell-Mobil CO<sub>2</sub> Pipeline

Shell and Mobil plan to construct a pipeline to transport CO<sub>2</sub> across New Mexico in a northwest-southeast direction. A total of 10 New Mexico counties would be traversed by the pipeline. Within the region of influence of the M-X system, however, only Chaves and De Baca counties would contain portions of the pipeline.

The pipeline would require 1,300-1,400 workers during the peak construction phase from April 1982 to June 1983. These workers would be spread over the ten-county area traversed by the pipeline. It is reasonable to assume that a crew of 300 persons would be employed in Chaves and De Baca counties during 1982-1983. If half of the crew lives in these counties, and if the ratio of total project-related employment to direct employment is 1.3, the project would generate about 200 jobs in Chaves and De Baca counties. Projection of the 1975 to 1978 average labor force participation rates and unemployment rates for these counties implies a level of employment of 19,800 in Chaves County and of 1,000 in De Baca County in 1982-1983. Pipeline-related employment would represent 1 percent of this two-county total.

Since the projected unemployment rate in Chaves County is 6 percent, many of the pipeline-related jobs could be filled by area workers who would otherwise be unemployed. The few remaining jobs generated by the project would be within the normal employment growth projected for Chaves County under trend-growth conditions. Consequently, no alterations are made to the baseline projections to account for this project.

o Arco CO<sub>2</sub> Pipeline

Arco plans to build a pipeline to transport CO<sub>2</sub> across the potential M-X deployment region from north to south through Union, Quay, Curry, and Roosevelt counties. The pipeline will cost approximately \$200 million, and have a peak requirement for about 600 workers. The peak of construction activity would occur between the fall of 1982 and the fall of 1983.

The economic and demographic impacts of the pipeline would be very similar to those of the Amoco pipeline project. The labor and materials demands for the two projects are similar, and both projects would be located in the same area. Peak activity on the Arco pipeline is scheduled approximately a year earlier than on the

Amoco project. The baseline populations of the four affected counties are increased by 1.5 percent in 1982-1983 to account for the impacts of the Arco pipeline. For the four counties traversed by both pipelines, the projected 1983 population under high-growth conditions reflects the combined impacts of the two projects.

o San Marco Coal Slurry Pipeline

The San Marco Pipeline Company plans to build a 900-mi coal slurry pipeline, 80 miles of which would cross Union County in the northeastern corner of New Mexico. At the peak of construction activity from fall 1984 through spring 1985, approximately 600 workers would be employed in building the pipeline. If half of the project's direct employees reside in Union County, and the project has an employment multiplier within the county of 1.25, total employment created in Union County as a result of the project would be 375 jobs. Projecting into the future the 1975 to 1978 average labor force participation and unemployment rates of 45.6 and 4.2 percent, employment in Union County (labor force basis) would be approximately 2,100 persons. Project-related employment of 375 jobs represents 17.9 percent of this baseline projection.

Given the relatively low projected rate of unemployment, nearly all of the 375 workers would be in-migrants. If the average ratio of population to employment is equal to the 1979 U.S. average of 2.3, the population impact would be 860 persons. Since the peak of construction activity would occur only during portions of 1984 and 1985, the annual average population impact would be somewhat less than 860 persons. Union County population is assumed to increase above trend-growth conditions by 500 persons in 1984 and 750 persons in 1985 as a result of the San Marco pipeline. In 1984, these impacts are added to the smaller impacts of the Amoco pipeline.

Table 2.1.2.4-3 summarizes the adjustments made to the baseline projections of the University of New Mexico's Bureau of Business and Economic Research and the Texas State Water Board due to effects of major non-M-X projects.

Comparison to Alternative Projections (2.1.2.4.3)

Employment on a labor force basis as shown in Table 2.1.2.4-2 is projected to grow quite slowly through 1994. This growth is expected to be significantly below the average projected for the two states of Texas and New Mexico as well as below the average projected for the U.S. Table 2.1.2.4-4 summarizes the employment growth rates projected in this analysis, and compares them to projections by Chase Econometrics for the two-state area and the United States.

From 1974 to 1980, employment on a labor force basis in the 24-county Texas/New Mexico ROI grew at an average annual rate of 1.8 percent. During the same years, the two states of Texas and New Mexico experienced employment growth on a labor force basis of 3.5 percent per year. At the same time, U.S. employment grew at an average annual rate of 2.1 percent.

For the period 1982 to 1985, employment on a labor force basis in the Texas/New Mexico ROI counties is projected by this analysis to grow at an average annual rate of 1.1 percent. For the two states of Texas and New Mexico, employment is projected to grow at an average annual rate of 3.3 percent, while

Table 2.1.2.4-3. Adjustments to baseline population projections to account for major non-M-X projects, Texas/New Mexico deployment regions (Page 1 of 2).

County and Project	1982	1983	1984	1985
Lamb County, TX				
Trend-growth Baseline	17,400	17,400	17,400	17,400
Impact of Tolk 1 and 2	100	100	100	100
High-growth Baseline	17,500	17,500	17,500	17,500
Curry County, NM				
Trend-growth Baseline	43,870	44,010	44,150	44,290
Impact of Amoco	--	660	660	--
Impact of Arco	660	660	--	--
High-growth Baseline	44,530	45,330	44,810	44,290
Harding County, NM				
Trend-growth Baseline	1,050	1,030	1,010	1,000
Impact of Amoco	--	15	15	--
High-growth Baseline	1,050	1,045	1,025	1,000
Quay County, NM				
Trend-growth Baseline	11,230	11,250	11,270	11,290
Impact of Amoco	--	170	170	--
Impact of Arco	170	170	--	--
High-growth Baseline	11,400	11,590	11,440	11,290
Roosevelt County, NM				
Trend-growth Baseline	16,610	16,670	16,730	16,800
Impact of Amoco	--	250	250	--
Impact of Arco	250	250	--	--
High-growth Baseline	16,860	17,170	16,980	16,800

T3922/10-2-81/a



Table 2.1.2.4-3. Adjustments to baseline population projections to account for major non-M-X projects, Texas/New Mexico deployment regions (Page 2 of 2).

County and Project	1982	1983	1984	1985
Union County, NM				
Trend-growth Baseline	4,850	4,830	4,810	4,800
Impact of Amoco	--	70	70	--
Impact of Arco	70	70	--	--
Impact of San Marco	--	--	500	750
High-growth Baseline	4,920	4,970	5,380	5,550

T3922/10-2-81/a

Sources: Trend-growth projections are from the Texas State Water Board (1980) and the University of New Mexico (no date), Bureau of Business and Economic Research. Impact estimates and high-growth projections have been calculated by HDR Sciences, October 1980.

Note: Only in Lamb County, Texas, do the changes shown persist through the entire projection period (through 1994). For the other counties shown, no adjustments are made to the trend-growth baseline from 1986 through 1994.

Table 2.1.2.4-4. Projected average annual employment growth rates, Texas/New Mexico ROI, Texas/New Mexico two-state area, and United States (percent).

	1974- 1980	1982- 1985	1985- 1990	1990- 1994
EIS - ROI	1.8	1.1	1.0	1.0
Chase				
Two-state area	3.5	3.3	2.5	n.a.
United States	2.1	2.6	1.7	n.a.

T5528/10-2-81

Sources: For EIS projections, HDR Sciences calculations, based on data provided by the Texas State Water Board (1980), the University of New Mexico (no date), the Texas Employment Commission, and the New Mexico Department of Employment Security. For the Chase Econometrics projections, the Chase regional long-term forecast of first quarter 1981 (Chase Econometrics, 1981a), and the U.S. long-term standard-trend forecast of second quarter 1981.

U.S. employment is projected to grow 2.6 percent per year. Employment in the Texas/New Mexico ROI during 1985 to 1990 is projected to grow at an average annual rate of 1.0 percent, compared to a projected rate of 2.5 percent for the two-state area, and 1.7 percent for the U.S. as a whole.

In summary, the Texas/New Mexico ROI is expected to remain predominantly rural with relatively slow growth compared to the U.S. and the two states of Texas and New Mexico. The growth which is projected is anticipated for the metropolitan areas of Amarillo and Lubbock. Chaves County is also expected to experience above-average growth. The small rural counties are projected to retain their rural nature without M-X, with relatively little employment change through 1994.

### **ANALYSIS OF OB AREAS (2.1.3)**

#### **Beryl (2.1.3.1)**

##### Introduction (2.1.3.1.1)

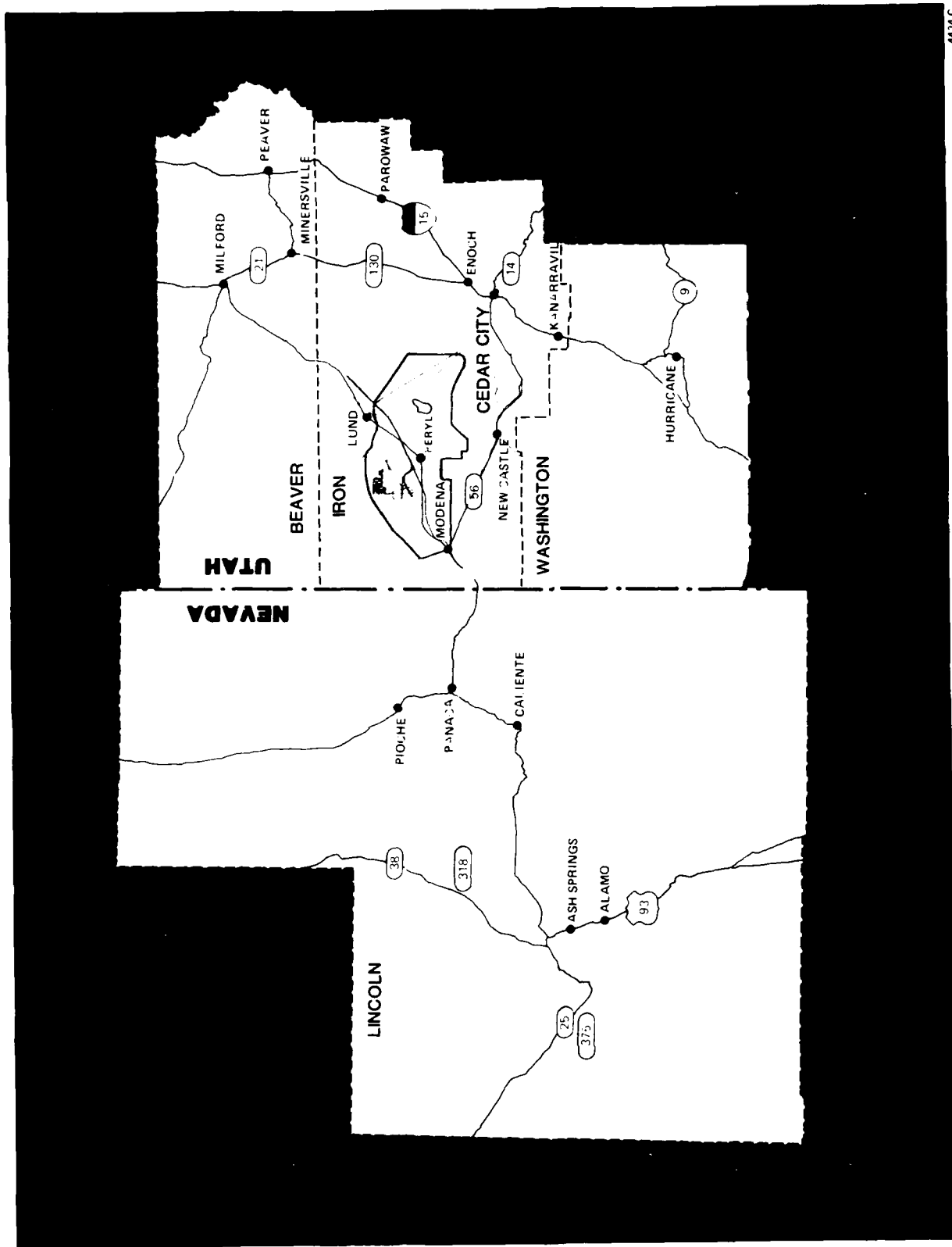
The site for the Beryl operating base (OB) option is located in Iron County in the southeastern section of the Nevada/Utah Region of Influence (ROI). As shown in Figure 2.1.3.1-1, the specific Area of Analysis (AOA) comprises Beaver, Iron, and Washington counties in Utah and Lincoln County in Nevada. For Alternatives 3 and 4, the Beryl site would be used as a first OB and under Alternative 1 this site would become a second OB. Other alternative OB sites include Coyote Spring and Ely, Nevada; Milford and Delta, Utah; Clovis, New Mexico; and Dalhart, Texas.

Beaver County's first settlement was Beaver, founded in 1856 as a Mormon colony. Economic development in Beaver County during the 19th century progressed from the early settlement by Mormon colonists to the discovery of precious metals, creating several mining boom towns and livestock and dairy production. Today, Beaver County's economy is dominated by agriculture, trade, government, geothermal power, and mining of alunite, gravel, perlite, and molybdenum.

In 1849, Brigham Young sent an expedition to locate suitable sites for settlement. They discovered an iron ore deposit west of what is now Cedar City, hence the name Iron County. In 1851, Cedar City and Parowan were established. They remain the major population centers in Iron County. The principal industries in the county are the mining and shipping of iron ore. The first iron ore refined west of the Mississippi was in this county though early smelting efforts failed due to lack of economical transportation to markets in the east. In 1923, after the Union Pacific Railroad ran a spur line into Cedar City, agriculture and iron ore mining and processing grew to become major industries in the county.

Washington County followed the same general economic development as Beaver and Iron counties; initial settlement by Mormon colonists, followed by mineral extraction and processing and agricultural development in the early 1900s. Government and trade are currently the major industrial sectors in the county. Agriculture and mining also are important economic activities.

In the early 1860s, rich ore deposits began to attract miners to Lincoln County. As a result, towns such as Hiko, Pioche, and El Dorado developed. Panaca was established by the Mormons as a way station for travelers between southern



SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

Figure 2.1.3.1-1. Proposed Beryl OB and area of analysis (AOA).

California and Salt Lake City. The county was created from part of Nye County by the state legislature in 1867. Since the early 1900s, mining and construction have been the basis of the Lincoln County economy. In 1957, Pioche, heavily dependent on mining, entered a recession when low priced imported metals placed local ore extraction at a disadvantage. Lincoln County's present economy is led by government employment, followed by mining, then trade and services.

#### Recent Labor Force Trends (2.1.3.1.2)

##### Beaver County (2.1.3.1.2.1)

The size of the labor force in Beaver County has remained relatively stable over the 1968 to 1980 period, ranging from 1,630 workers in 1970 to 2,060 in 1979. Table 2.1.3.1-1 indicates that between 1975 and 1980 the size of the labor force averaged 1,920 workers. Employment levels have also remained relatively stable ranging from 1,540 persons in 1970 to 1,960 persons in 1979. The number of employed workers living in the county decreased from 1979 to 1980 by 250 persons.

Unemployment in the county peaked in 1975 when 160 persons were without work. The unemployment rate during that year was 8.4 percent. Since 1975 unemployment in the county has decreased steadily to 95 persons or 5.2 percent of the labor force in 1980.

##### Iron County (2.1.3.1.2.2)

The Iron County labor force has experienced steady growth throughout the 1968 to 1980 period, increasing by 60 percent during that time. Table 2.1.3.1-2 shows that the county labor force reached a peak of 7,500 workers in 1980. Employment levels showed the same trend during the study period, although 1980 employment dropped by 150 workers from the previous year.

The unemployment rate has ranged from 4.1 percent in 1969 and 1971 to 6.7 percent in 1975, 1976 and 1980. In 1980, 503 workers living in the county were unemployed, a 50 percent increase over 1978 and 1979.

##### Washington County (2.1.3.1.2.3)

The size of the labor force in Washington County has doubled since 1968, from 4,470 workers in that year to 9,060 in 1980. Table 2.1.3.1-3 indicates that both labor force and employment levels have increased steadily throughout the study period. The number of employed workers living in the county reached 8,590 in 1980.

The county's unemployment rate reached 7.4 percent in 1975, the highest annual rate since 1968. Unemployment levels decreased during the following years to 3.9 percent in 1978 and 1979. In 1980, 470 persons living in the county were unemployed, for an unemployment rate of 5.2 percent.

##### Lincoln County (2.1.3.1.2.4)

The labor force in Lincoln County showed no significant trend from 1968 to 1974, when the number of workers in the county rose by 20 percent over the 1973 level. As Table 2.1.3.1-4 shows, the county labor force increased from 1,000

Table 2.1.3.1-1. Population, labor force, employment, and unemployment, 1968-1980, in Beaver County, Utah.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975- 1980 AVERAGE
POPULATION	4000	3900	3850	3800	4100	4100	4200	4200	4200	4300	4300	4400	4377	4296
LABOR FORCE	1940	1660	1630	1730	1790	1830	1890	1938	1840	1870	2020	2064	1806	1923
L F PARTICIPATION														
RATE	48.5	42.6	42.3	45.5	43.7	44.6	45.0	46.1	43.8	43.5	47.0	46.9	41.3	44.8
EMPLOYMENT	1860	1570	1540	1620	1680	1720	1780	1775	1720	1740	1910	1960	1711	1802
UNEMPLOYMENT	80	90	90	110	110	110	110	163	120	130	110	104	95	120
UNEMPLOYMENT RATE	4.1	5.4	5.5	6.4	6.1	6.0	5.8	8.4	6.9	7.0	5.4	5.0	5.3	6.3
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY														CT010102
24-APR-81														

Table 2.1.3.1-2. Population, labor force, employment, and unemployment, 1968-1980, in Iron County, Utah.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975- 1980 AVERAGE
POPULATION	11600	11900	12300	12900	13200	13600	14000	14400	14800	15600	16400	17200	17304	15950
LABOR FORCE	4700	4910	5050	5430	5740	5880	6050	6557	6540	6780	7200	7480	7497	7009
L F PARTICIPATION														
RATE	40.5	41.3	41.1	42.1	43.5	43.2	43.2	45.5	44.2	43.5	43.9	43.5	43.3	44.0
EMPLOYMENT	4480	4710	4820	5210	5410	5530	5730	6120	6100	6360	6860	7144	6996	6596
UNEMPLOYMENT	220	200	230	220	330	330	320	437	440	420	340	336	503	412
UNEMPLOYMENT RATE	4.7	4.1	4.6	4.1	5.7	5.6	5.3	6.7	6.7	6.2	4.7	4.5	6.7	5.9
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY														CT010103
24-APR-81														

Table 2.1.3.1-3. Population, labor force, employment, and unemployment, 1968-1980, in Washington County, Utah.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	AVERAGE	1975-1980
POPULATION	12300	13000	13900	14900	16000	16000	16500	17200	18000	19200	20600	22600	26002	20600	1980
LABOR FORCE	4470	4590	4910	5020	5490	6080	6090	6474	6870	7320	8140	8623	9062	7748	1980
L F PARTICIPATION RATE	36.3	35.3	35.3	33.7	34.3	38.0	36.9	37.6	38.2	38.1	39.5	38.2	34.9	37.7	1980
EMPLOYMENT	4220	4340	4640	4730	5190	5780	5680	5997	6480	6950	7820	8283	8593	7353	1980
UNEMPLOYMENT	250	250	270	290	300	300	410	477	390	370	320	340	469	394	1980
UNEMPLOYMENT RATE	5.6	5.4	5.5	5.8	5.5	4.9	6.7	7.4	5.7	5.1	3.9	3.9	5.2	5.2	1980
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY															CT0107
24-APR-81															

Table 2.1.3.1-4. Population, labor force, employment, and unemployment, 1968-1980, in Lincoln County, Nevada.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	AVERAGE	1975-1980
POPULATION	2334	2454	2557	2300	2200	2338	2500	2700	2803	2876	3216	2972	3697	3044	1980
LABOR FORCE	1000	1080	1050	1000	1010	1000	1210	1300	1250	1350	1430	1380	1570	1380	1980
L F PARTICIPATION RATE	42.8	44.0	41.1	43.5	45.9	42.8	48.4	48.1	44.6	46.9	44.5	46.4	42.5	45.5	1980
EMPLOYMENT	870	910	940	930	910	880	1110	1200	1140	1270	1390	1330	1530	1308	1980
UNEMPLOYMENT	130	170	110	70	100	120	100	100	110	80	40	50	50	71	1980
UNEMPLOYMENT RATE	13.0	15.7	10.5	7.0	9.9	12.0	8.3	7.7	8.8	5.9	2.8	3.6	3.2	5.3	1980
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY															CT0079
24-APR-81															

workers in 1973 to 1,570 in 1980. The unemployment rate was above 10.0 percent during four of the years between 1968 and 1973, but has been below 4 percent since 1978. The average annual unemployment rate between 1975 and 1980 was 5.3 percent.

#### Sectoral Employment Trends (2.1.3.1.3)

Tables 2.1.3.1-5 through 2.1.3.1-8 show BEA, REIS establishment-based employment by industrial sector in Beaver, Iron and Washington counties in Utah, and in Lincoln County, Nevada, respectively. For a discussion of differences between these data and the labor force employment data in Tables 2.1.3.1-1 through 2.1.3.1-4, see Section 2.1.1.3. Tables 2.1.3.1-9 through 2.1.3.1-12 show the most recent average annual non-agricultural wage and salary employment estimates released by the Utah Department of Employment Security and Nevada Employment Security Department. For a discussion of the differences between these data and the BEA, REIS employment estimates, see Section 2.1.1.3.1.

##### Beaver County (2.1.3.1.3.1)

In Beaver County, total employment decreased from 1,710 jobs in 1974 to 1,610 in 1979. The loss of 180 jobs in the transportation and public utilities sector and 90 jobs in the mining sector in 1975 accounted for the decreased employment level in the county. Government, agriculture and trade were the leading employment sectors for the duration of the study period. Figure 2.1.3.1-2 indicates these sectors provided 23 percent, 18 percent and 17 percent, respectively, of jobs during 1979.

##### Iron County (2.1.3.1.3.2)

Total employment increased steadily throughout the 6-year period 1974-79, from 5,840 jobs in 1974 to 6,790 jobs in 1979. Government and trade have been the largest sectors throughout the period. They provide 1,580 and 1,550 jobs, respectively, in 1979. Figure 2.1.3.1-2 indicates these two sectors accounted for nearly half of the 1979 total county employment. The services sector is the third largest employment sector, providing between 9 and 11 percent of the total number of jobs in the county annually. Agricultural sector employment was relatively stable over the 1974 to 1978 interval, but decreased by nearly 50 jobs in 1979. Agriculture is the fourth largest sector, providing about 8 to 10 percent of the total employment in Iron County. The construction and manufacturing sectors have shown significant employment increases over 1974 to 1979; of 48 and 62 percent respectively. The employment share of these two sectors combined was less than 10 percent of jobs in the county in 1974. By 1979, these two sectors comprised nearly 13 percent of total county employment.

##### Washington County (2.1.3.1.3.3)

Washington County has a relatively stable and diversified economy with employment mainly concentrated in trade, government and services. Manufacturing and construction are also significant employment sectors in the county. All of these sectors registered employment gains over the 1974-79 period as total employment in the county increased by 39 percent. The largest sector, trade, increased employment from 1,350 jobs in 1974 to 1,940 jobs in 1979. Figure 2.1.3.1-2 indicates that



TABLE 2.1.3.1-5 EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

BEAVER	UTAH					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	1712	1651	1713	1731	1691	1614
NUMBER OF PROPRIETORS	383	383	375	394	385	388
FARM PROPRIETORS	208	205	197	206	199	197
NON-FARM PROPRIETORS	175	178	178	188	186	191
TOTAL WAGE AND SALARY EMPLOYMENT	1329	1268	1338	1337	1306	1226
FARM	95	111	112	106	109	89
NON-FARM	1234	1157	1226	1231	1197	1137
PRIVATE	879	791	853	883	831	764
AG. SERV., FOR., FISH., AND OTHER	(L)	(L)	(L)	(L)	(L)	(L)
MINING	118	31	28	23	47	40
CONSTRUCTION	38	33	34	45	43	64
MANUFACTURING	95	100	131	149	121	68
NON-DURABLE GOODS	91	97	121	134	(D)	53
DURABLE GOODS	(L)	(L)	10	15	(D)	15
TRANSPORTATION AND PUBLIC UTILITIES	178	(D)	(D)	(D)	(D)	(D)
WHOLESALE TRADE	(D)	(D)	(D)	(D)	(D)	16
RETAIL TRADE	259	267	285	276	283	257
FINANCE, INSURANCE, AND REAL ESTATE	23	27	28	30	29	30
SERVICES	(D)	(D)	(D)	(D)	(D)	(D)
GOVERNMENT AND GOVERNMENT ENTERPRISES	355	366	373	348	366	373
FEDERAL, CIVILIAN	39	44	46	43	54	53
FEDERAL, MILITARY	34	29	28	26	27	31
STATE AND LOCAL	282	293	299	279	285	289

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.1-6. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

IRON	UTAH						
	1974	1975	1976	1977	1978	1979	
TOTAL EMPLOYMENT	5836	6105	6249	6363	6661	6792	
NUMBER OF PROPRIETOR	866	877	877	915	930	959	
FARM PROPRIETORS	377	371	357	373	361	357	
NON-FARM PROPRIETORS	489	506	520	542	569	602	
TOTAL WAGE AND SALARY EMPLOYMENT	4970	5228	5372	5448	5731	5833	
FARM	211	247	250	236	243	199	
NON-FARM	4759	4981	5122	5212	5488	5634	
PRIVATE	3209	3366	3469	3679	3948	4052	
AG. SERV. . . FOR . FISH . AND OTHER	11	22	38	33	28	29	
MINING	260	238	199	254	268	266	
CONSTRUCTION	295	275	281	327	402	377	
MANUFACTURING	305	337	387	405	408	493	
NON-DURABLE GOODS	214	190	239	(D)	224	242	
DURABLE GOODS	91	147	148	(D)	184	251	
TRANSPORTATION AND PUBLIC UTILITIES	235	247	269	335	374	400	
WHOLESALE TRADE	132	172	174	165	175	172	
RETAIL TRADE	1197	1228	1268	1276	1366	1373	
FINANCE, INSURANCE, AND REAL ESTATE	280	202	231	231	262	291	
SERVICES	534	645	622	653	665	651	
GOVERNMENT AND GOVERNMENT ENTERPRISES	1550	1615	1653	1533	1540	1582	
FEDERAL, CIVILIAN	175	220	254	279	292	305	
FEDERAL, MILITARY	131	118	117	111	113	120	
STATE AND LOCAL	1244	1277	1282	1143	1135	1157	

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.1-7. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

	WASHINGTON		UTAH		1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT					5357	5451	5951	6376	6997	7433
NUMBER OF PROPRIETORS					1057	1058	1089	1183	1210	1255
FARM PROPRIETORS					344	339	326	339	329	326
NON-FARM PROPRIETORS					713	719	763	844	891	929
TOTAL WAGE AND SALARY EMPLOYMENT					4300	4393	4862	5193	5777	6178
FARM					91	106	107	101	104	85
NON-FARM					4209	4287	4755	5092	5673	6093
PRIVATE					3004	3036	3497	3812	4325	4707
AG. SERV., FOR. FISH, AND OTHER					28	14	10	12	18	18
MINING					(L)	(L)	11	28	41	64
CONSTRUCTION					423	335	368	444	508	600
MANUFACTURING					317	336	505	502	560	641
NON-DURABLE GOODS					251	242	367	338	369	394
DURABLE GOODS					66	94	138	164	191	247
TRANSPORTATION AND PUBLIC UTILITIES					121	123	130	136	150	186
WHOLESALE TRADE					206	236	267	225	246	277
RETAIL TRADE					1140	1218	1354	1493	1649	1665
FINANCE, INSURANCE, AND REAL ESTATE					175	166	182	211	290	352
SERVICES					588	600	670	761	863	904
GOVERNMENT AND GOVERNMENT ENTERPRISES					1205	1251	1258	1280	1348	1386
FEDERAL, CIVILIAN					128	171	178	185	193	203
FEDERAL, MILITARY					164	147	147	142	146	155
STATE AND LOCAL					913	933	933	953	1009	1028

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.1-8. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

	NEVADA					
LINCOLN	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	1084	1128	1089	1187	1332	1332
NUMBER OF PROPRIETORS	174	163	169	163	158	162
FARM PROPRIETORS	82	64	65	64	59	59
NON-FARM PROPRIETORS	92	99	104	99	99	103
TOTAL WAGE AND SALARY EMPLOYMENT	910	965	920	1024	1170	1170
FARM	74	74	87	84	90	84
NON-FARM	836	891	833	940	1085	1086
PRIVATE	461	487	414	512	633	678
AG SERV., FOR., FISH., AND OTHER	(D)	(L)	(D)	(L)	(D)	(D)
MINING	132	146	67	151	293	263
CONSTRUCTION	(D)	(D)	(D)	(D)	(D)	(D)
MANUFACTURING	16	22	12	(D)	(D)	11
NON-DURABLE GOODS	(D)	22	12	(D)	(D)	11
DURABLE GOODS	(D)	0	0	0	0	0
TRANSPORTATION AND PUBLIC UTILITIES	79	(D)	(D)	85	82	76
WHOLESALE TRADE	(L)	(L)	(L)	(L)	(L)	(L)
RETAIL TRADE	128	144	143	152	146	170
FINANCE, INSURANCE, AND REAL ESTATE	(D)	(D)	(D)	(D)	(D)	(D)
SERVICES	(D)	(D)	(D)	(D)	77	115
GOVERNMENT AND GOVERNMENT ENTERPRISES	375	404	419	428	452	408
FEDERAL, CIVILIAN	26	30	29	30	27	27
FEDERAL, MILITARY	18	18	18	15	16	15
STATE AND LOCAL	331	356	372	383	409	366

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.3.1-9. Nonagricultural wage and salary employment by industrial sector, Beaver County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	1,137	1,051	-7.6
Mining	41	44	7.3
Construction	64	51	-20.3
Manufacturing	67	32	-52.2
Transportation, Communication and Public Utilities	178	127	-28.7
Trade	278	283	1.8
Finance, Insurance and Real Estate	29	29	0.0
Services and Miscellaneous	108	123	13.9
Government	372	362	-2.7

T5644/8-25-81

Source: Utah Department of Employment Security,  
1980; 1981.

Table 2.1.3.1-10.

Nonagricultural wage and salary  
employment by industrial sector,  
Iron County, 1979 and 1980 annual  
averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	5,905	5,651	-4.3
Mining	266	158	-40.6
Construction	384	290	-24.5
Manufacturing	486	451	-7.2
Transportation, Communication and Public Utilities	475	410	-13.7
Trade	1,545	1,514	-2.0
Finance, Insurance and Real Estate	284	295	3.9
Services and Miscellaneous	635	646	1.7
Government	1,831	1,887	3.1

T5645/8-25-81

Source: Utah Department of Employment Security,  
1980; 1981.

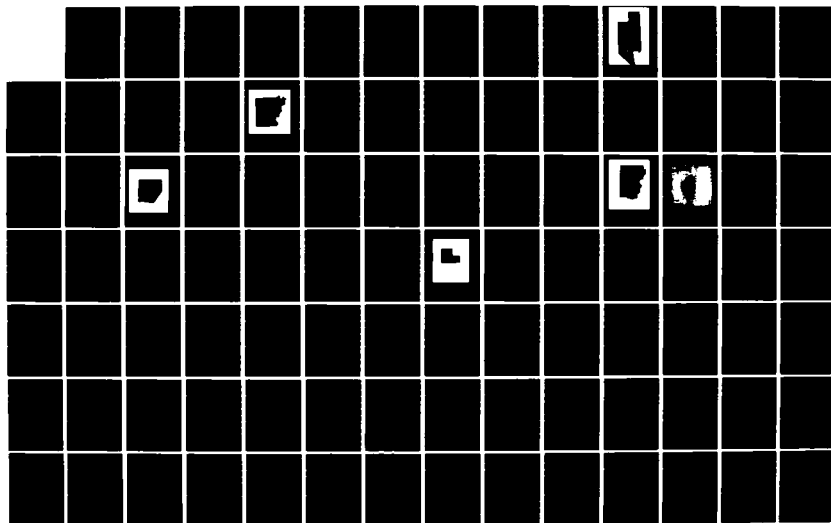
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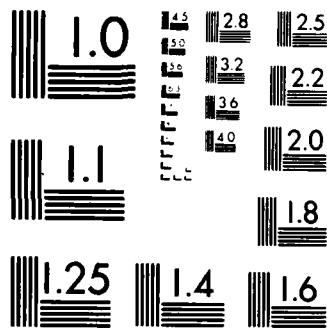
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NATIONAL BUREAU OF STANDARDS 1963-A



Table 2.1.3.1-11.

Nonagricultural wage and salary  
employment by industrial sector,  
Washington County, 1979 and  
1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	6,312	6,511	3.2
Mining	64	70	9.4
Construction	606	537	-11.4
Manufacturing	637	697	9.4
Transportation, Communication and Public Utilities	179	231	29.1
Trade	1,934	1,934	0.0
Finance, Insurance and Real Estate	345	408	18.3
Services and Miscellaneous	983	951	-3.3
Government	1,565	1,683	7.5

T5646/8-25-81

Source: Utah Department of Employment Security,  
1980; 1981.

Table 2.1.3.1-12.

Nonagricultural wage and salary  
employment by industrial sector,  
Lincoln County, 1979 and 1980  
annual averages.

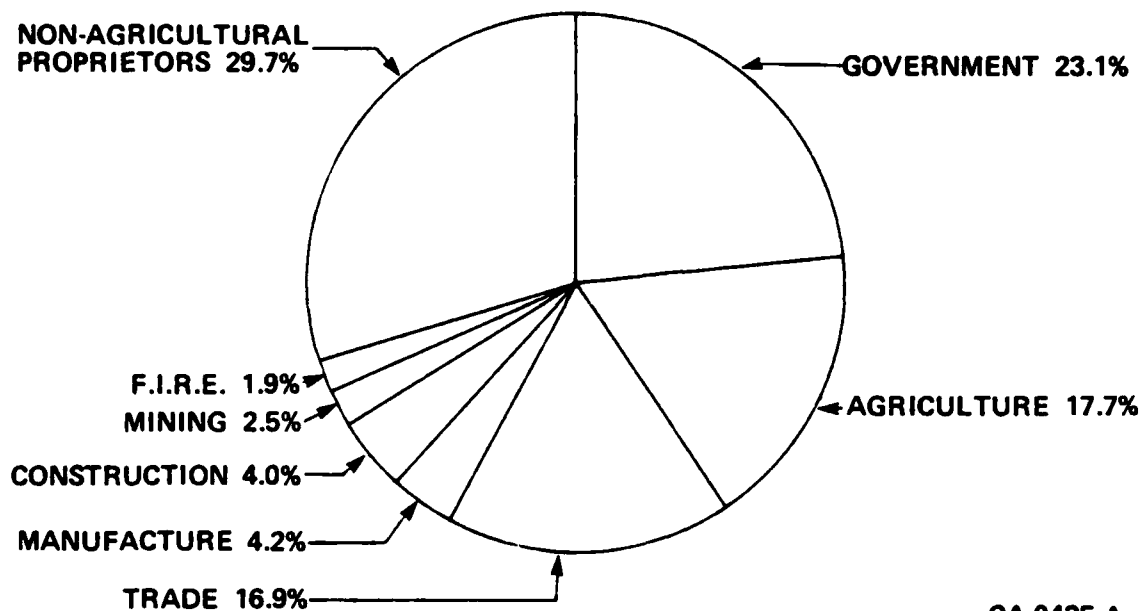
Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	1,040	1,337	28.6
Mining	270	305	13.0
Construction	10	54	440.0
Manufacturing	10	12	20.0
Transportation, Communication and Public Utilities	80	38	-52.5
Trade	180	235	30.6
Finance, Insurance and Real Estate	10	25	150.0
Services and Miscellaneous	120	289	140.8
Government	360	379	5.3

T5647/8-25-81

Source: Nevada Employment Security Department,  
1980; 1981.

## BEAVER COUNTY UTAH

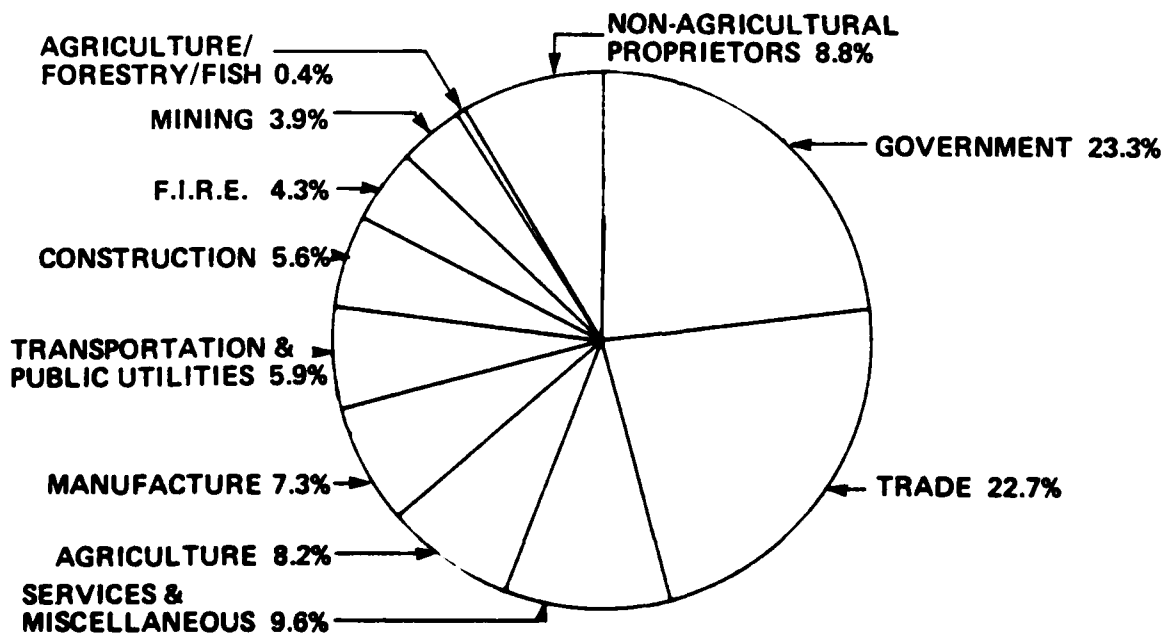
1979 TOTAL EMPLOYMENT = 1,614



CA-0435-A

## IRON COUNTY UTAH

1979 TOTAL EMPLOYMENT = 6,792



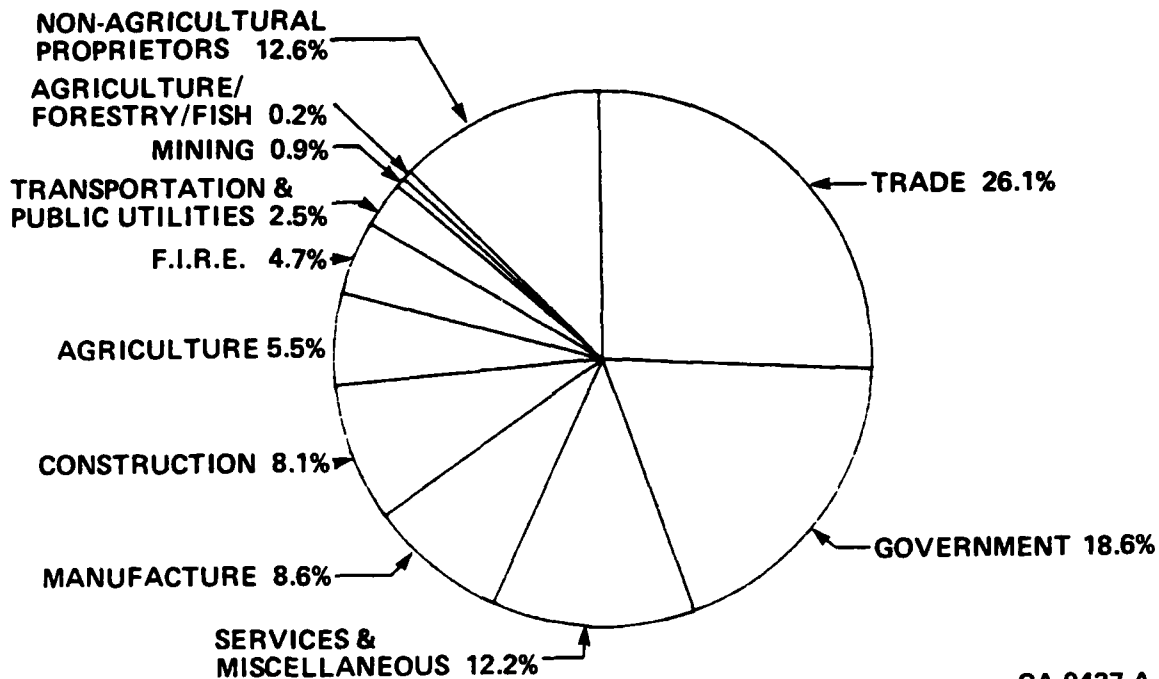
CA-0436-A

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.3.1-2. Employment by type and broad industrial sources, Beaver, Iron, Washington, and Lincoln counties, 1979 (page 1 of 2).

## WASHINGTON COUNTY UTAH

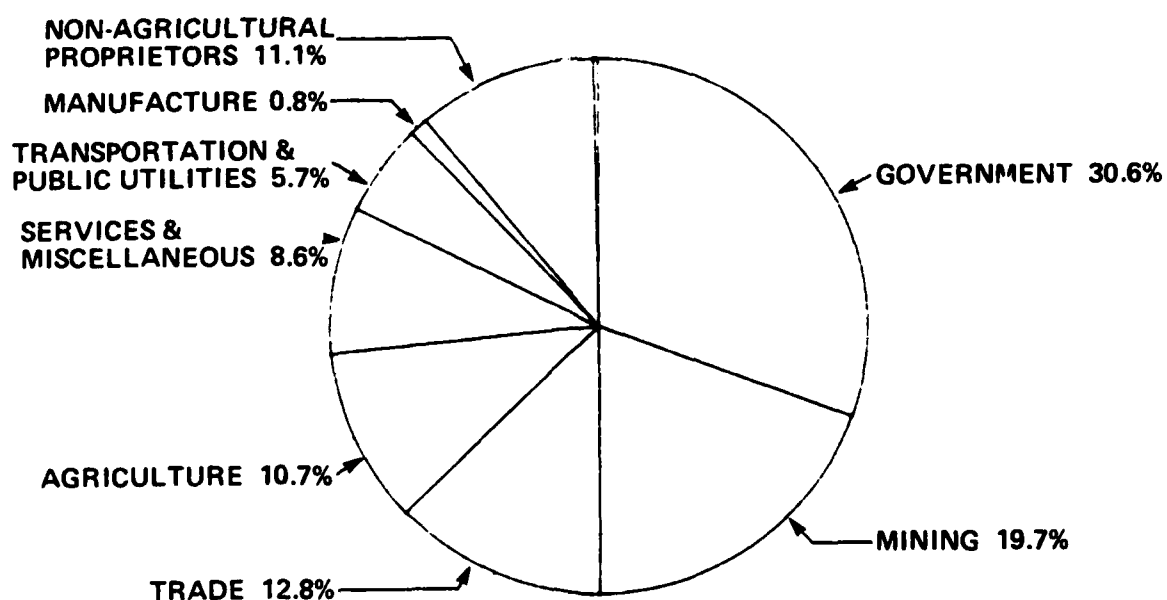
1979 TOTAL EMPLOYMENT = 7,433



CA-0437-A

## LINCOLN COUNTY NEVADA

1979 TOTAL EMPLOYMENT = 1,332



CA-0438-A

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.3.1-2. Employment by type and broad industrial sources, Beaver, Iron, Washington, and Lincoln counties, 1979 (page 2 of 2).

over one-fourth of all jobs in the county in 1979 were in the trade sector. The government sector experienced only moderate gains during the 1974-1979 span providing 19 percent of total county employment. The services sector accounted for 12 percent of county employment in 1979, after an increase of 340 jobs from 1974 to 1979. Only in the agricultural sector (including agricultural services, forestry, fishing and other categories) did employment decline slightly over the 6-year term.

#### Lincoln County (2.1.3.1.3.4)

Total employment in Lincoln County increased by 29 percent during the study period, from 1,080 jobs in 1974 to 1,330 in 1979. Most of the increases were in the mining and services sectors. Mining employment increased from 130 jobs in 1974 to 260 jobs in 1979 despite a decline to 70 jobs in 1976. Employment in the mining industry peaked in 1978 at 290 jobs. The government sector was the largest employer in the county throughout the 1974-79 period, providing 410 jobs in 1979. The second, third and fourth leading sectors in 1979 were mining, trade and agriculture (including farm proprietors and farm wage and salary employment). Figure 2.1.3.1-2 shows that these four leading sectors combined for nearly 75 percent of the total county employment in 1979.

#### Projected Employment (2.1.3.1.4)

While economic growth has been relatively slow, expansion of mineral production and the development of energy resources may occur in the county in the near future. Expanded alunite mining and processing is possible in Beaver County. About 1,000 workers would be employed in mining, milling, and processing 12,000 tons of ore per day beginning in 1986 and continuing through the mid-1990s. A second major potential development--the Pine Grove Molybdenum Project (PGMP)--includes mining and milling of 10,000-30,000 tons of ore per day. PGMP would employ about 500 workers beginning in 1982 increasing to around 700 in 1984 and continuing at that level through 1994. In addition, geothermal energy exploration and construction of a 20-megawatt plant at Roosevelt Hot Springs would provide direct employment of about 100 jobs through 1994. Employment growth in the mining and energy industries will spur additional growth in other industries in the county. The trade, services, and construction sectors will receive much of this induced employment. Employment projections for Beaver County with and without these developments are presented in ETR-2B.

In addition, Table 2.1.3.1-13 presents projections of employment for 1982 to 1994 in Beaver County for three sectors which would be most affected by M-X--construction, trade, and services. These projections are displayed for both trend-growth (Baseline 1) and high-growth (Baseline 2) conditions. With the trend-growth projection, growth would be most rapid in services--an average of 2.8 percent per year, compared to 2.6 percent for construction and 2.0 percent for trade. The rapid build-up of construction employment is visible in the high-growth projection, with a peak of 2,000 construction jobs (without M-X) in 1986. This is followed by a projected loss of 1,900 construction jobs between 1986 and 1988 as the high-growth projects enter their operations phases. Employment projections for trade and services follow a similar pattern, but with a much smaller boom-bust fluctuation expected. After 1988, Beaver County is projected to grow much more slowly. The mining and energy projects could produce a significant degree of

Table 2.1.3.1-13. Projected employment in construction, trade, and services in Beaver County under trend-growth and high-growth conditions, 1982-1994 (number of jobs).

Year	Trend-Growth			High-Growth		
	Construction	Trade	Services	Construction	Trade	Services
1982	58	372	231	293	457	313
1983	60	384	242	1,076	556	411
1984	63	397	255	1,322	622	472
1985	65	410	268	1,703	666	554
1986	67	417	274	2,050	722	593
1987	68	424	279	1,189	631	498
1988	69	430	284	144	638	499
1989	70	437	291	146	650	504
1990	72	443	296	144	659	527
1991	74	451	302	152	674	530
1992	75	458	309	153	686	549
1993	76	466	316	162	699	550
1994	79	474	322	159	704	568

T5532/10-2-81/F

Note: Projections are presented to nearest job only for convenience in review, and do not imply this level of accuracy.

Source: University of Utah, 1980b.

dislocation in the county economy as firms attempt to adjust to local labor shortages, wage escalation, and in-migration of new workers in key occupations.

Construction, trade, and services employment projections for Iron and Lincoln counties are presented in Table 2.1.3.1-14. Only the trend-growth baseline is predicted since the high-growth projection is not significantly different. In Iron County, services, construction, and trade employment levels are projected to increase at an annual average rate of 3.3, 3.0, and 2.6 percent, respectively, between 1982 and 1994. In Lincoln County, employment growth is not projected to occur as rapidly as in Iron County. The annual average growth rate for services, construction, and trade employment are projected at 2.8, 2.7, and 2.2 percent, respectively. Washington County was not included in the M-X region of influence by the Bureau of Economic and Business Research (BEBR), and therefore employment projections by sector for that county were not included in their analysis.

### **Coyote Spring (2.1.3.2)**

#### **Introduction (2.1.3.2.1)**

The Coyote Spring operating base (OB) option is located in the southern part of the Nevada/Utah Region of Influence (ROI). As shown in Figure 2.1.3.2-1, the specific Area of Analysis (AOA) includes Clark and Lincoln counties in southeastern Nevada. For the Proposed Action, the Coyote Spring OB would be located in Coyote Spring Valley 52 miles north of Las Vegas, along U.S. Highway 93. This OB would also be used as the first base in Alternatives 1, 2, and 8 and the second base in Alternatives 4 and 6. Other alternative OB sites include Ely, Nevada; Milford, Delta and Beryl, Utah; Clovis, New Mexico; and Dalhart, Texas.

Early in the 19th century the groundwater of the meadows of Las Vegas attracted caravans of traders and Mormon colonists. In 1855, Mormons established a settlement on the Las Vegas meadows, occupied and farmed the land, and organized a mission to Christianize the Indians. At the time of the Mormon arrival, Indians were basically agrarian, mainly growing wheat. Mormon farmers improved the area's grain crops, processed wild hay, and organized cattle ranching. The Mormon settlement proved to be shortlived (ending 1855-1857) due to internal dissension which stemmed largely from the possibility of working the lead and silver ore of the area, especially the Potosi lead mine southwest of Las Vegas. Las Vegas continued to be a way point on the Santa Fe trail and later as a way station on the Union Pacific Railroad. However, it remained a small town until after World War II.

In the early 1860s, rich ore deposits near Hiko, Picohe, and El Dorado began to attract miners to Lincoln County. Panaca was established by the Mormons as a way station for travelers between southern California and Salt Lake City. The county was created from a part of Nye County by the State Legislature in 1867, as the result of personal efforts of governor Blasdel.

Since the early 1900s, mining and construction have had a profound impact on the Lincoln County economy. In 1957, Pioche entered a recession when imported metals offered lower prices than local metals.

Table 2.1.3.1-14. Projected trend-growth employment in construction, trade, and services in Iron and Lincoln counties, 1982-1994 (number of jobs).

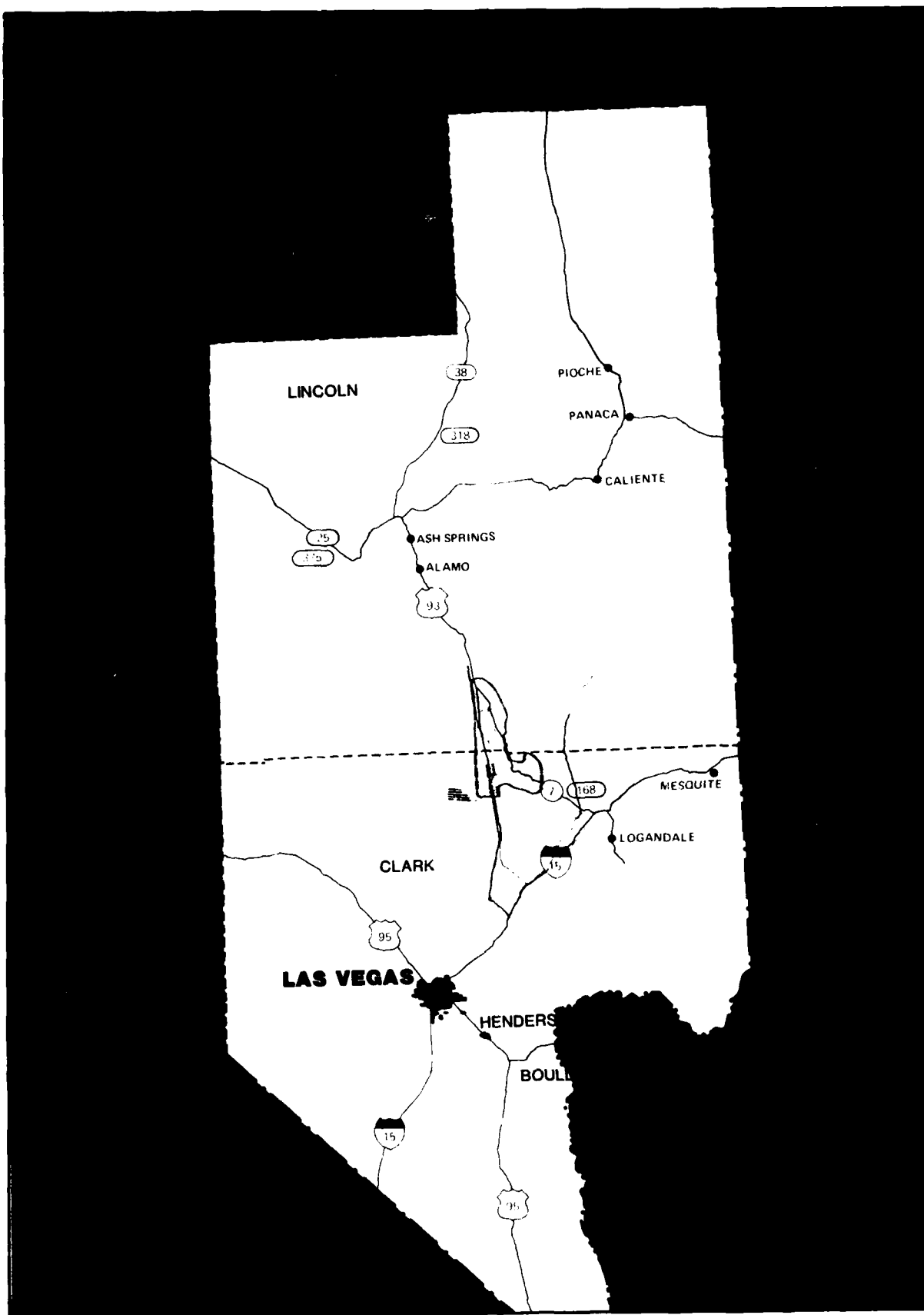
	Iron County			Lincoln County		
	Construction	Trade	Services	Construction	Trade	Services
1982	492	1,661	895	21	233	162
1983	513	1,722	940	21	238	168
1984	536	1,786	989	23	246	175
1985	559	1,856	1,042	24	255	181
1986	575	1,898	1,071	25	260	186
1987	589	1,941	1,100	25	263	190
1988	604	1,986	1,130	25	269	195
1989	620	2,031	1,161	26	275	200
1990	637	2,078	1,193	26	281	206
1991	563	2,119	1,222	28	286	211
1992	669	2,164	1,253	28	293	216
1993	685	2,208	1,284	28	298	222
1994	701	2,251	1,314	29	304	226

T5912/10-2-81/a

Note: Projections are presented to nearest job only for convenience in review and do not imply this level of accuracy. Trend-growth projections only are presented for Iron and Lincoln counties since high-growth projections are not significantly different.

Source: University of Utah, 1980b.





SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

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Figure 2.1.3.2-1. Proposed Coyote Spring OB and area of analysis (AOA).

Lincoln County's present economy is led by government, mining, and trade. Government activity reflects the presence of the Air Force at Nellis Air Force Range and other federal agencies.

#### Recent Labor Force Trends (2.1.3.2.2)

##### Clark County (2.1.3.2.2.1)

Over 99 percent of the county's population is employed in the Las Vegas area of Clark County. The major employment sectors, in descending order of importance, are: services (including the gaming industry), trade, government, construction, and transportation and public utilities.

The size of the labor force in Clark County has more than doubled over the past 13 years from 101,300 persons in 1968 to 208,000 in 1980. Table 2.1.3.2-1 indicates that this growth has been steady. Employment levels have also more than doubled since 1968 and show the same steady growth pattern as the labor force. In 1980, 193,200 of the persons living in Clark County were employed.

Table 2.1.3.2-1 also shows that the number of unemployed workers tripled between 1968 and 1975 as the unemployment rate rose from 5.2 to 10.6. Unemployment decreased in the next three years, but resumed the upward trend again in 1979 and 1980. The number of unemployed workers living in the county in 1980 was 14,800, 7.1 percent of the Clark County labor force.

##### Lincoln County (2.1.3.2.2.2)

Recent labor force trends in Lincoln County are presented in the Beryl analysis, Section 2.1.3.1.2. Employment levels also increased to 1,520 workers in 1980. Table 2.1.3.1-4 (located in the Beryl OB analysis) indicates that unemployment dropped from 130 persons in 1968 to 50 in 1980. The unemployment rate was above 10.0 percent four of the years from 1968 to 1973 but has been below 4 percent since 1978. The average annual unemployment rate between 1975 and 1980 was 5.3 percent.

#### Sectoral Employment Trends (2.1.3.2.3)

Tables 2.1.3.2-2 and 2.1.3.1-8 (this table is presented in the Beryl Area of Analysis) show BEA/REIS estimates of employment by industrial sector in Clark and Lincoln counties, respectively. Tables 2.1.3.2-3 and 2.1.3.1-12 (see Beryl Area of Analysis) present 1979 and 1980 nonagricultural wage and salary employment in Clark and Lincoln counties, respectively. These are the most recent annual averages available from the Nevada Employment Security Department, however they are not strictly comparable to the BEA/REIS data since different industrial section classifications are used by the two agencies. See Section 2.1.1.3.1 for a full discussion of the sources and characteristics of these data.

##### Clark County (2.1.3.2.3.1)

Total employment in Clark County increased by 47 percent during the 1974 to 1979 period, from 156,000 jobs in 1974 to 230,000 in 1979. Figure 2.1.3.2-2 indicates that the services and trade sectors are the major employers in the county,

Table 2.1.3.2-1. Population, labor force, employment, and unemployment, 1968-1980, in Clark County, Nevada.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975- 1980 AVERAGE
POPULATION	233899	267720	273288	286700	295800	307849	321100	330700	343302	360955	376828	393816	462218	378303
LABOR FORCE	101300	110200	116200	120400	127600	138200	147500	156000	163600	175700	181400	195800	208000	180416
L.F. PARTICIPATION RATE	43.3	41.2	42.5	42.0	43.1	44.9	45.9	47.2	48.0	48.7	48.1	49.7	45.0	47.8
EMPLOYMENT	96000	105200	109000	111400	117500	128900	135200	139400	149500	161500	172600	184500	193200	166783
UNEMPLOYMENT	5300	5000	7200	9000	10100	9300	12300	16600	16100	14200	8800	11300	14800	13633
UNEMPLOYMENT RATE	5.2	4.5	6.2	7.5	7.9	6.7	8.3	10.6	9.7	8.1	4.9	5.8	7.1	7.7
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY														
4-APR-81														

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TABLE 2.1.3.2-2. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

CLARK	NEVADA					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	15911	15961	170268	189013	209388	229932
NUMBER OF PROPRIETORS	7807	7969	8278	9098	9504	9920
FARM PROPRIETORS	145	114	116	113	104	104
NON-FARM PROPRIETORS	7662	7855	8162	8985	9400	9816
TOTAL WAGE AND SALARY EMPLOYMENT	148104	151992	161990	179915	199884	220012
FARM	148	148	173	167	180	167
NON-FARM	147956	151844	161817	179748	199704	219845
PRIVATE	119405	122205	130822	145235	164909	184613
AG. SERV. , FOR. , FISH , AND OTHER	(D)	(D)	(D)	(D)	(D)	(D)
MINING	(D)	(D)	(D)	(D)	(D)	(D)
CONSTRUCTION	8796	6927	7992	10277	13844	15689
MANUFACTURING	4998	4982	5116	5610	6300	6874
NON-DURABLE GOODS	2221	2200	2297	2385	2551	2645
DURABLE GOODS	2777	2782	2819	3225	3749	4229
TRANSPORTATION AND PUBLIC UTILITIES	8637	9100	9750	10622	11895	12609
WHOLESALE TRADE	3545	3734	4088	4382	5372	6036
RETAIL TRADE	22989	24119	26698	29744	33734	37417
FINANCE, INSURANCE, AND REAL ESTATE	6079	5911	6214	6894	7893	9699
SERVICES	63830	66832	70396	77054	85158	95298
GOVERNMENT AND GOVERNMENT ENTERPRISES	28551	29639	30995	34513	34795	35232
FEDERAL, CIVILIAN	4358	4469	4597	4615	4574	4577
FEDERAL, MILITARY	9260	9598	10220	10306	9727	9570
STATE AND LOCAL	14933	15572	16178	19592	20494	21085

(1) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.3.2-3. Nonagricultural wage and salary employment  
by industrial sector, Clark County,  
1979 and 1980 annual averages.

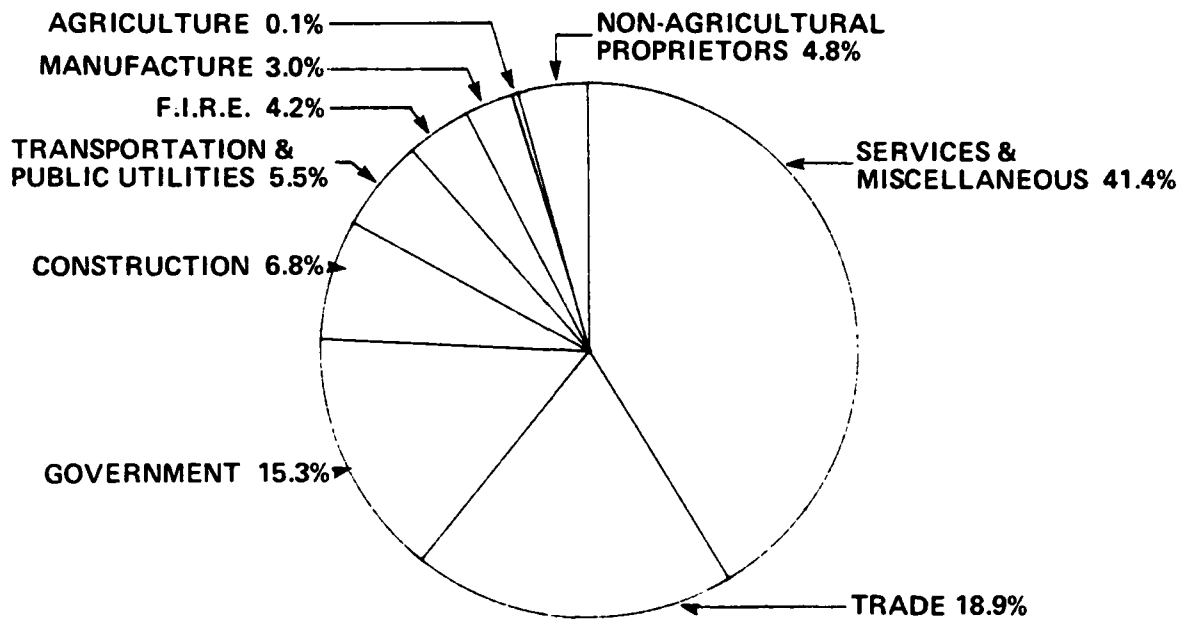
Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	209,400	216,188	3.2
Mining	500	471	-5.8
Construction	15,500	14,088	-9.1
Manufacturing	6,900	6,820	-1.2
Transportation, Communication and Public Utilities	12,500	12,528	0.2
Trade	43,300	45,790	5.8
Finance, Insurance and Real Estate	9,300	10,001	7.5
Services and Miscellaneous	96,700	100,167	3.6
Government	24,700	26,323	6.6

T5648/8-25-81

Source: Nevada Employment Security Department, 1980;  
1981.

## CLARK COUNTY NEVADA

1979 TOTAL EMPLOYMENT = 229,932



Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

CA-0439-A-1

Figure 2.1.3.2-2. Employment by type and broad industrial sources, Clark County, 1979.

providing 41 and 19 percent shares of 1979 total employment, respectively. Both have shown considerable growth (services increased by 47 percent; trade by 64 percent) between 1974 and 1979. The government sector was the second largest employer in the county in 1974 but has since been third due to more rapid growth in the trade sector. Government provided 35,200 jobs in 1979, most at the state and local level. The construction sector increased by 78 percent from 1974 to 1979, despite a decline of 1,900 jobs in 1975.

#### **Lincoln County (2.1.3.2.3.2)**

Lincoln County sectoral employment trends are presented in the Beryl analysis, Section 2.1.3.1.3.4.

#### **Projected Employment (2.1.3.2.4)**

Employment projections for Lincoln County are presented in Section 2.1.3.1.4. In addition, trend-growth projections for the construction, trade, and service sectors are presented in Table 2.1.3.2-4 for Clark County. Trend-growth projections for Lincoln County appear in Table 2.1.3.1-14 in the Beryl Area of Analysis section.

#### **Delta (2.1.3.3)**

##### **Introduction (2.1.3.3.1)**

The Delta operating base (OB) option is located in the northeastern part of the Nevada/Utah Region of Influence (ROI). As shown in Figure 2.1.3.3-1, the Area of Analysis (AOA) consists of Millard, Beaver, and Juab counties in Utah. The proposed OB site is located just north of U.S. highways 6 and 50, about 20 miles west-southwest of Delta. For the Proposed Action, the Delta OB would not be constructed. This OB site would be used as a second OB under Alternative 2. Other alternative OB sites under consideration include, Coyote Spring and Ely, Nevada; Milford and Beryl, Utah; Clovis, New Mexico; and Dalhart, Texas.

Millard's first settlement was in Fillmore in 1851, which was established as the territorial capital of the Utah Territory. Railroads, the vital link to outside markets, helped agriculture to develop. In 1878, the Utah Central Railroad was completed through Millard County to Milford in Beaver County. The Utah Central later joined the Utah Southern Railroad at Lyndyl. In 1923, the Union Pacific railroad extended a spur line to Fillmore to ship sugar beets, grain, and livestock to other parts of the United States. Agriculture, government, and trade are currently the primary industries in the county.

Beaver County's first settlement was Beaver, founded in 1856 as a Mormon colony. During the 19th century, Beaver County's economy progressed from the early Mormon settlements, to the discovery of precious metals, creating several boom towns, to livestock and dairy production. Today, Beaver County's economy is dominated by agriculture, trade, government, and mineral extraction of alunite, gravel, perlite, molybdenum, and geothermal steam.

Juab County's initial settlements were founded by Mormon colonists and later expanded during the mineral exploration period in the early 1900s, as new railroad links provided access to outside markets. Manufacturing, trade, and government are

Table 2.1.3.2-4. Projected trend-growth employment in construction, trade, and services in Clark County, 1982-1994 (number of jobs).

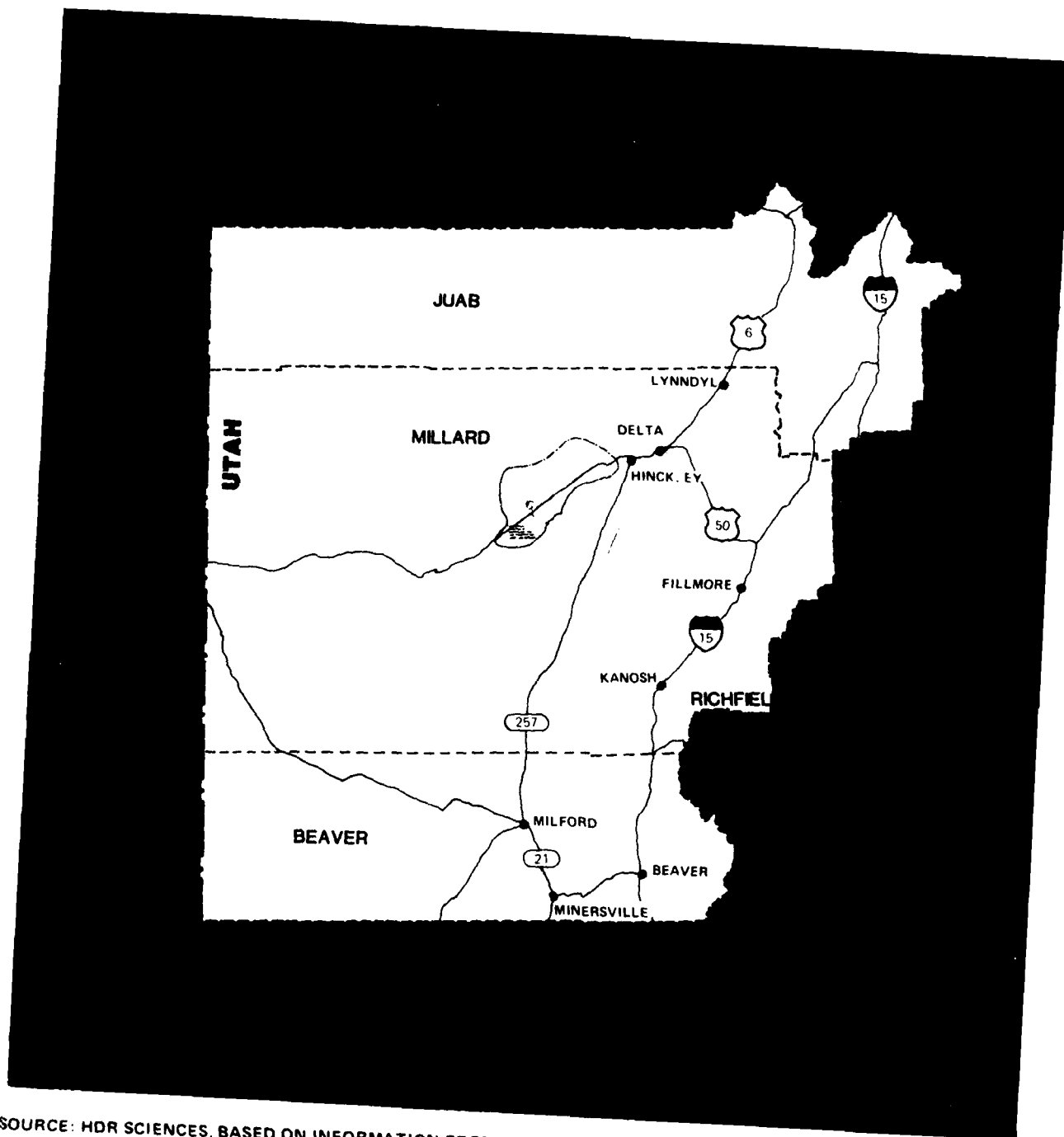
Year	Clark County		
	Construction	Trade	Services
1982	16,216	47,048	97,818
1983	16,900	48,874	101,607
1984	17,632	50,834	105,628
1985	18,393	52,893	109,833
1986	18,919	54,252	112,914
1987	19,432	55,590	116,022
1988	19,970	56,991	119,222
1989	20,522	58,402	122,504
1990	21,081	59,844	125,876
1991	21,658	61,283	129,257
1992	22,240	62,765	135,172
1993	22,832	64,231	136,265
1994	23,430	65,705	139,868

T5529/10-2-81/F

Source: University of Utah, 1980b.

Note: Projections are presented to nearest job only for convenience in review, and do not imply this level of accuracy. Only trend-growth projections are presented for Clark County since high-growth projections are not significantly greater.





4436-C-1

SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

Figure 2.1.3.3-1. Proposed Delta OB and area of analysis (AOA).

currently the primary industrial sectors. Agriculture and mining are also important economic activities in the county.

The economies of the AOA counties are primarily dependent on government, trade, and agriculture. In Millard County, Delta and the surrounding communities of Deseret and Oasis, Hinckley, Leamington, Lynndyl, Oak City, Sugarville, and Sutherland are small agrarian communities. However, manufacturing and construction sectors are expected to increase because of proposed projects in the area. These projects include the Intermountain Power Project, Continental Lime cement plant, and Precision Built Modular Home Manufacturing. The Martin Marietta cement plant is currently under construction in Juab County. These projects are expected to have a significant influence on the economy and population of the AOA counties.

#### Recent Labor Force Trends (2.1.3.3.2)

##### Millard County (2.1.3.3.2.1)

The size of the labor force in Millard County has shown a general upward trend from 1986 to 1980, increasing from 2,760 to 3,685 workers during this period. Table 2.1.3.3-1 indicates that the most significant change in the county labor force occurred in 1975 when the number of available workers increased by more than 400. Employment moved with this labor force trend increasing from 2,620 workers in 1968 to 3,470 in 1980.

Unemployment levels fluctuated between 140 and 227 persons between 1968 and 1977 and then fell to record lows in 1978 and 1979. During those respective years, 120 and 115 workers living in the county were unemployed as the unemployment rate dropped to 3.6 and 3.3 percent. In 1980, the unemployment level rose by 100 workers to 215, 5.8 percent of the labor force.

##### Beaver County (2.1.3.3.2.2)

Recent labor force trends in Beaver County are presented in the Beryl analysis, Section 2.1.3.1.2.

##### Juab County (2.1.3.3.2.3)

The size of the labor force in Juab County has shown an increase of about 25 percent during the 1968 to 1980 study period. Table 2.1.3.3-2 indicates that 2,200 persons living in the county were available for work in 1980. Employment levels ranged from 1,620 workers in 1968 to 2,090 and 2,040 workers in 1979 and 1980, respectively.

The highest levels of unemployment in the county occurred between 1970 and 1975. In 1971, unemployment peaked at 230 persons, comprising 12.3 percent of the labor force. During 1978 and 1979 the unemployment rate dropped to 5.7 percent. In 1980, 160 county residents were without work as the unemployment rate rose to 7.3 percent.

Table 2.1.3.3-1. Population, labor force, employment, and unemployment, 1968-1980, in Millard County, Utah.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975-1980 AVERAGE
POPULATION	7000	7000	7050	7200	7700	7700	7900	8000	8200	8400	8700	9000	8736	8506
LABOR FORCE	2760	3000	2970	3120	3050	3050	3200	3626	3240	3180	3340	3474	3685	3424
LF PARTICIPATION RATE	39.4	42.9	42.1	43.3	39.6	39.6	40.5	45.3	39.5	37.9	38.4	38.6	42.2	40.3
EMPLOYMENT	2620	2850	2760	2910	2910	2900	3020	3399	3040	3030	3220	3359	3470	3253
UNEMPLOYMENT	140	150	210	210	140	150	180	227	200	150	120	115	215	171
UNEMPLOYMENT RATE	5.1	5.0	7.1	6.7	4.6	4.9	5.6	6.3	6.2	4.7	3.6	3.3	5.8	5.0

SOURCE STATE DEPARTMENT OF EMPLOYMENT SECURITY  
24-APR-81

C10105

Table 2.1.3.3-2. Population, labor force, employment, unemployment, 1968-1980, in Juab County, Utah.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975-1980 AVERAGE
POPULATION	4400	4500	4600	4600	4910	5000	5200	5200	5300	5600	5700	5700	5516	5502
LABOR FORCE	1750	1800	1830	1870	1860	1980	2080	2119	1980	2080	2120	2211	2203	2118
LF PARTICIPATION RATE	39.8	40.0	39.8	40.7	41.3	39.6	40.0	40.8	37.4	37.1	37.2	38.8	39.7	38.5
EMPLOYMENT	1620	1690	1630	1640	1670	1810	1910	1932	1840	1930	2000	2086	2042	1971
UNEMPLOYMENT	130	110	180	230	190	170	170	187	140	150	120	125	161	147
UNEMPLOYMENT RATE	7.4	6.1	9.8	12.3	10.2	8.6	8.2	8.8	7.1	7.2	5.7	5.7	7.3	7.0

SOURCE STATE DEPARTMENT OF EMPLOYMENT SECURITY  
24-APR-81

C10104

### Sectoral Employment Trends (2.1.3.3.3)

Tables 2.1.3.3-3, 2.1.3.1-5, and 2.1.3.3-4 detail employment by industrial sector in Millard, Beaver, and Juab counties, respectively.

Tables 2.1.3.3-5, 2.1.3.1-9 (see Beryl Area of Analysis), and 2.1.3.3-6 present 1979 and 1980 nonagricultural wage and salary employment in Millard, Beaver, and Juab counties, respectively. These are the most recent annual averages available from the Utah Department of Employment Security; however, they are not strictly comparable to the BEA/REIS data since different industrial sector classifications are used by the two agencies. See Section 2.1.1.3.1 for a full description of the sources and characteristics of these data.

#### Millard County (2.1.3.3.3.1)

Total employment in Millard County increased slightly over the 1974 to 1979 period although the two leading employment sectors, agriculture and government, registered declines between those years. Agriculture employment levels dropped from 1,030 jobs in 1974 to 970 jobs in 1979 while employment in the government sector declined from 740 to 710 jobs in the same years. All other sectors except services industries increased employment levels, counter-balancing the loss in number of jobs in agriculture and government. Trade and manufacturing, the third and fourth largest employment sectors, provided 15 and 7 percent, respectively, of the county employment total in 1979. Figure 2.1.3.3-2 presents employment shares by industrial sector of total employment in 1979.

#### Beaver County (2.1.3.3.3.2)

Beaver County sectoral employment trends are presented in the Beryl analysis, Section 2.1.3.1.3.1.

#### Juab County (2.1.3.3.3.3)

Juab County's total employment fluctuated slightly during 1974 to 1979 between 2,049 jobs in 1976 and 2,173 in 1977. The total employment change between 1974 and 1979 was negligible. Government, manufacturing, and trade were the three largest employers in the county throughout the term and accounted for 21 percent, 21 percent, and 18 percent shares of the total number of jobs in 1979. The next largest sector was agriculture with a 13 percent share of the county employment in 1979. These industrial sector employment shares of 1979 total employment are shown in Figure 2.1.3.3-2.

### Projected Employment (2.1.3.3.4)

Section 2.1.3.1.4 presents projections of employment in Millard, Beaver, and Juab counties under trend-growth and high-growth conditions.

Major anticipated activities in Millard County include the Intermountain Power Project (IPP), Continental Line cement plant, and Precision Built Modular Home Manufacturing. IPP is expected to employ over 3,300 workers during the peak construction period in 1986. The Martin Marietta cement plant is under

TABLE 2.1.3.3-3. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

MILLARD	UTAH					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	3256	3412	3395	3389	3395	3492
NUMBER OF PROPRIETORS	1061	1063	1043	1131	1117	1123
FARM PROPRIETORS	737	727	699	729	706	699
NON-FARM PROPRIETORS	324	336	344	402	411	424
TOTAL WAGE AND SALARY EMPLOYMENT	2195	2349	2352	2258	2278	2369
FARM	288	338	343	323	333	273
NON-FARM	1907	2011	2009	1935	1945	2096
PRIVATE	1171	1263	1264	1268	1261	1390
AG. SERV., FOR., FISH., AND OTHER	18	24	23	26	28	30
MINING	74	57	54	62	77	115
CONSTRUCTION	74	114	54	42	42	116
MANUFACTURING	216	212	230	232	257	243
NON-DURABLE GOODS	213	200	210	198	220	211
DURABLE GOODS	(L)	12	20	34	37	32
TRANSPORTATION AND PUBLIC UTILITIES	112	121	117	116	117	138
WHOLESALE TRADE	60	122	124	101	97	106
RETAIL TRADE	380	373	419	441	424	406
FINANCE, INSURANCE, AND REAL ESTATE	43	44	48	49	50	49
SERVICES	194	196	195	199	169	187
GOVERNMENT AND GOVERNMENT ENTERPRISES	736	748	745	667	684	706
FEDERAL, CIVILIAN	72	80	77	60	67	70
FEDERAL, MILITARY	65	57	56	52	51	60
STATE AND LOCAL	599	611	612	555	566	576

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.3-4. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

UTAH	UTAH					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	2120	2069	2049	2173	2164	2127
NUMBER OF PROPRIETORS	387	384	376	403	392	398
FARM PROPRIETORS	238	234	226	235	228	235
NON FARM PROPRIETORS	149	150	150	168	164	172
TOTAL WAGE AND SALARY EMPLOYMENT	1733	1685	1673	1770	1772	1729
FARM	43	50	50	48	49	40
NON FARM	1690	1635	1623	1722	1723	1689
PRIVATE	1261	1204	1195	1294	1284	1240
AG. SERV. FOR FISH AND OTHER	(L)	(L)	(D)	(L)	(D)	(L)
MINING	128	90	55	(D)	35	82
CONSTRUCTION	(D)	(D)	(D)	(D)	(D)	94
MANUFACTURING	511	496	531	554	537	445
NON DURABLE GOODS	432	385	426	430	431	(D)
DURABLE GOODS	79	111	105	124	106	(D)
TRANSPORTATION AND PUBLIC UTILITIES	38	43	40	48	44	58
WHOLESALE TRADE	30	43	42	39	41	41
RETAIL TRADE	331	314	317	372	377	349
FINANCE, INSURANCE, AND REAL ESTATE	22	25	31	33	33	38
SERVICES	(D)	(D)	152	178	185	131
GOVERNMENT AND GOVERNMENT ENTERPRISES	429	431	428	428	439	449
FEDERAL, CIVILIAN	23	29	29	30	29	25
FEDERAL, MILITARY	42	36	35	32	33	39
STATE AND LOCAL	364	366	364	366	377	385

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.3.3-5. Nonagricultural wage and salary employment by industrial sector, Millard County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	2,056	2,058	0.1
Mining	115	125	8.6
Construction	119	100	-16.0
Manufacturing	239	193	-19.2
Transportation, Communication and Public Utilities	183	172	-6.0
Trade	510	544	6.7
Finance, Insurance and Real Estate	49	59	20.4
Services and Miscellaneous	161	168	4.3
Government	680	697	2.5

T5649/8-25-81

Source: Utah Department of Employment Security,  
1980; 1981.

Table 2.1.3.3-6. Nonagricultural wage and salary employment by industrial sector, Juab County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	1,705	1,777	4.2
Mining	82	103	25.6
Construction	97	154	58.8
Manufacturing	441	424	-3.9
Transportation, Communication and Public Utilities	66	48	-27.3
Trade	388	408	5.2
Finance, Insurance and Real Estate	38	36	-5.3
Services and Miscellaneous	131	185	41.2
Government	462	419	-9.3

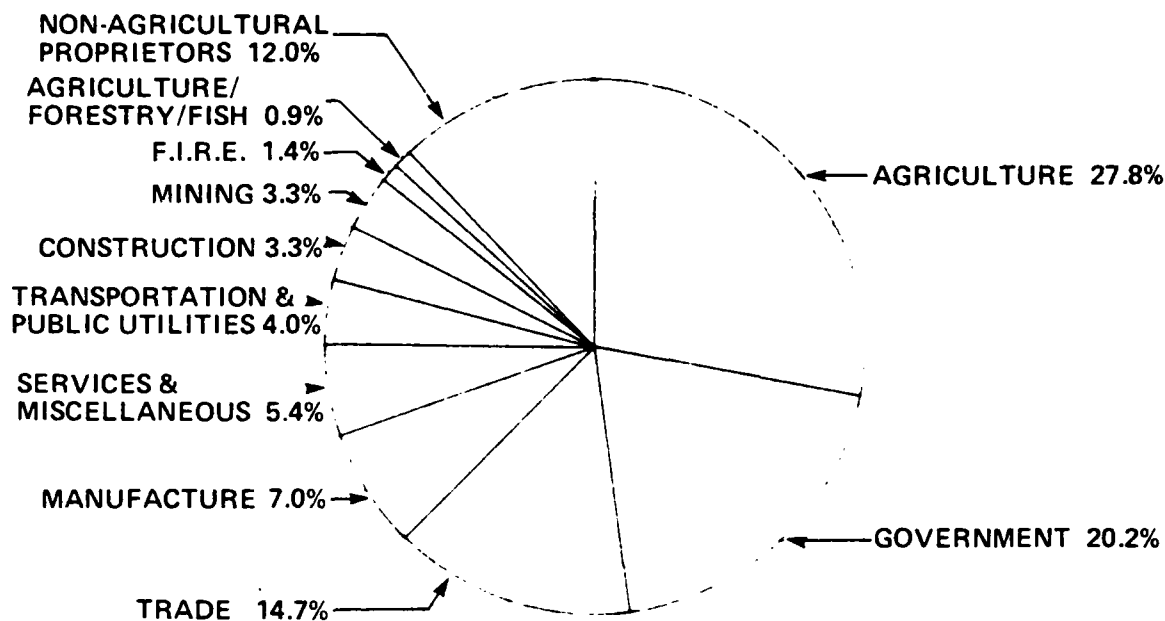
T5650/8-25-81

Source: Utah Department of Employment, 1980; 1981.



## MILLARD COUNTY UTAH

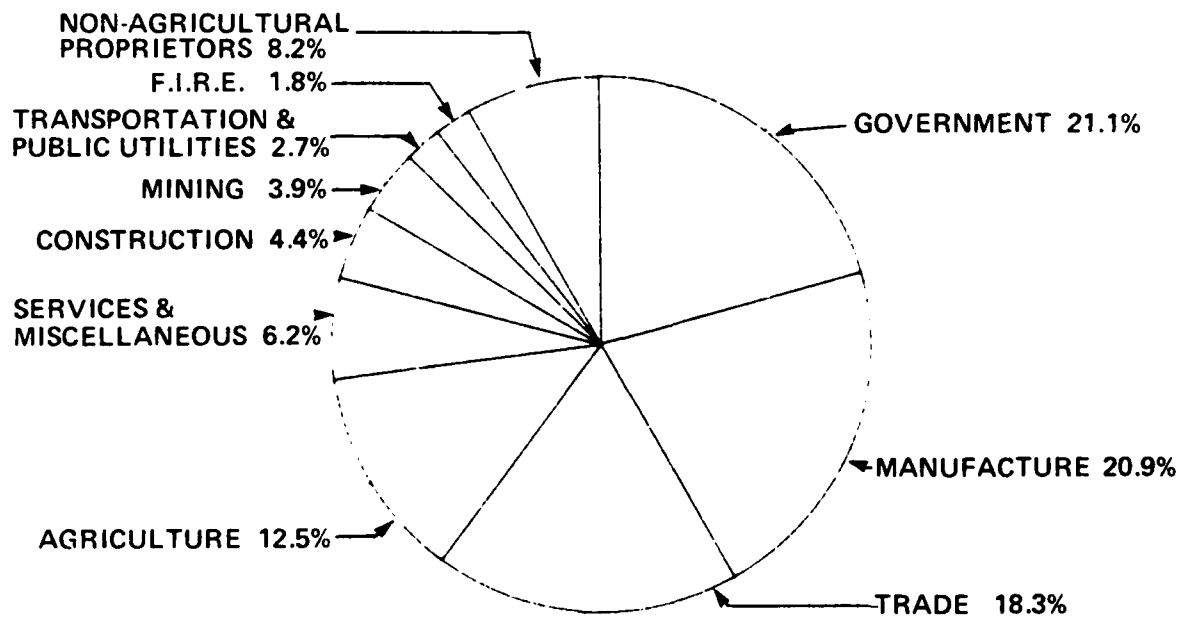
1979 TOTAL EMPLOYMENT = 3,492



CA-0440-A

## JUAB COUNTY UTAH

1979 TOTAL EMPLOYMENT = 2,127



CA-0441-A

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.3.3-2. Employment by type and broad industrial sources, Millard and Juab counties, 1979.

construction in Juab County. These developments combined are projected to employ up to 1,100 workers in the long run.

Table 2.1.3.3-7 presents projected employment for the construction, trade, and service sectors in Millard County under both trend-growth and high-growth conditions. Construction employment in the county would be greatly affected by IPP and other non-M-X developments. Table 2.1.3.3-8 presents projected employment for the construction, trade, and services sectors in Juab County under the two growth scenarios. Juab County is not expected to experience as much large-scale growth as that anticipated under the high-growth baseline in Millard County. Beaver County sectoral employment projections appear in Table 2.1.3.1-13 in the Beryl section.

## **Ely (2.1.3.4)**

### Introduction (2.1.3.4.1)

The potential site for the Ely operating base (OB) is in the north-central section of the designated Nevada/Utah Region of Influence (ROI). The Area of Analysis (AOA) for this operating base option is White Pine County (Figure 2.1.3.4-1). The communities of Ely, McGill, and Ruth are each within 25 mi of the proposed Ely operating base. This OB site would be used under Alternatives 3 and 5 and would be the second OB in each case. Other alternative OB sites include Coyote Spring, Nevada; Milford, Delta, and Beryl, Utah; Clovis, New Mexico; and Dalhart, Texas.

Once a part of Lander County, White Pine County was organized separately on April 1, 1869 because of rapid population growth in the Hamilton area due to a rich mining discovery on Treasure Hill. Hamilton became the county seat in the same year. By 1885, the mine had become uneconomical to work, and the town had declined to the point that the county seat was moved to Ely.

Around 1906, the Kennecott Copper Corporation began mining operations in Ely and, until the late 1970s, was the major supporting industry for Ely, McGill, and Ruth. Until recently, Ely was one of the largest copper producing areas in the country. Although the tourist-related sector is the most important contributor to personal income in the state of Nevada, copper mining and processing were traditionally of primary importance in White Pine County. Although White Pine County now contributes only about 1 percent to total state income, in the past it has been the source of over 20 percent of mining income statewide.

Agriculture provides only a small share of total employment in White Pine County, but is important because it is generally stable, and because irrigation of crops consumes quantities of water far exceeding other uses in the area. Agriculture and the associated lifestyle are an important part of the perceived quality of life for residents of the area.

Table 2.1.3.3-7. Projected employment in construction, trade, and services in Millard County, trend-growth and high-growth baselines, 1982-1994 (number of jobs).

Year	Trend-Growth			High-Growth		
	Construction	Trade	Services	Construction	Trade	Services
1982	51	587	262	741	697	354
1983	53	612	276	1,058	727	368
1984	56	639	293	2,372	869	483
1985	59	668	311	3,478	1,021	605
1986	61	683	320	3,018	1,019	596
1987	63	697	328	2,928	1,032	613
1988	64	712	337	2,382	1,019	597
1989	65	728	346	1,026	928	514
1990	67	743	357	123	879	478
1991	69	755	363	114	896	489
1992	69	765	370	115	907	497
1993	71	777	377	119	922	506
1994	73	789	384	120	934	520

T5531/10-2-81/a

Note: Projections are presented to the nearest job only for convenience in review and do not imply this level of accuracy.

Source: University of Utah, 1980b.

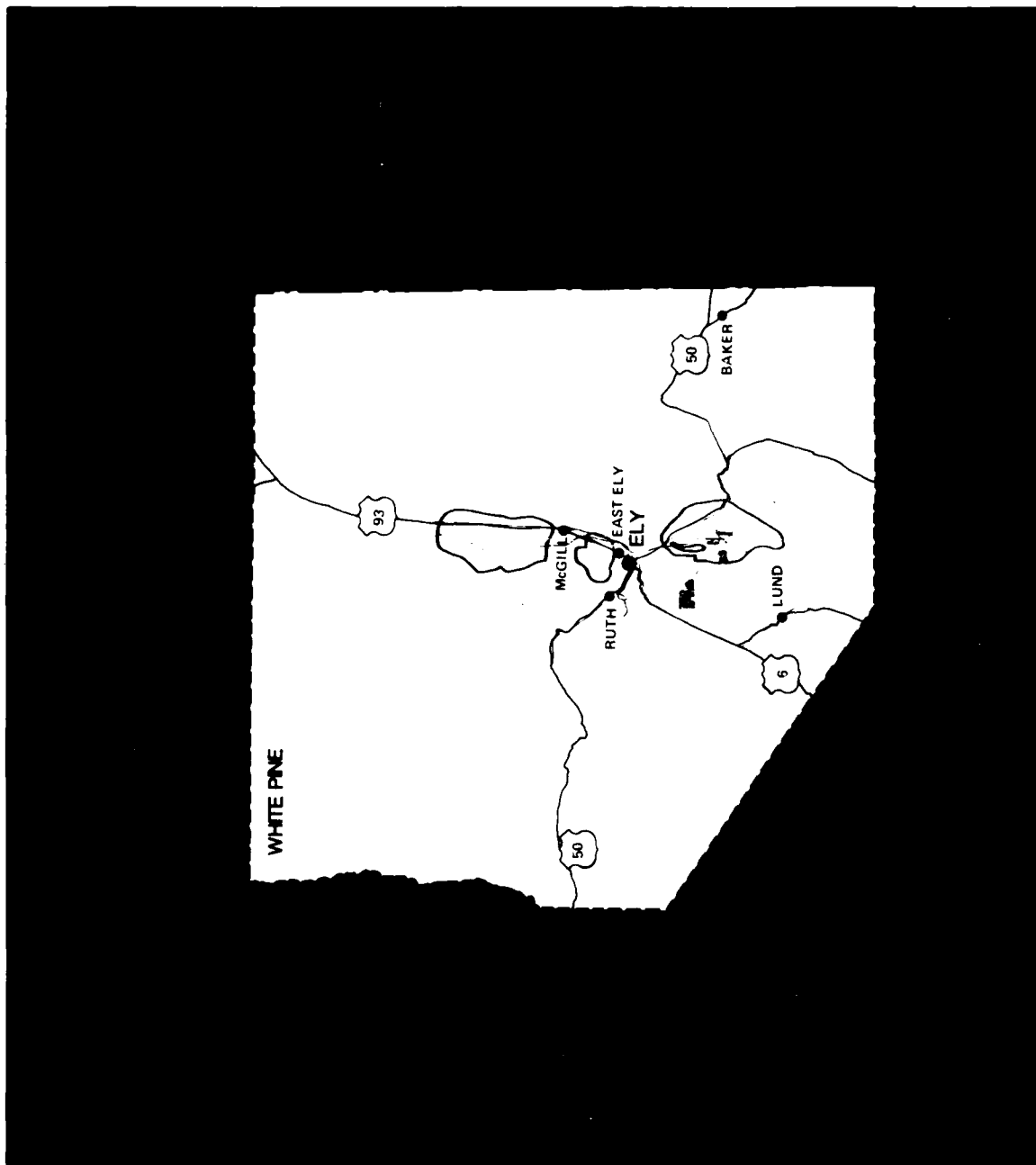
Table 2.1.3.3-8. Projected trend and high-growth employment in construction, trade, and services, Juab County, 1982-1994.

Year	Trend-Growth			High-Growth		
	Construction	Trade	Services	Construction	Trade	Services
1982	26	480	260	85	506	283
1983	27	502	276	49	564	333
1984	29	525	293	58	609	372
1985	30	550	313	67	654	412
1986	31	563	321	65	662	416
1987	32	575	330	66	672	425
1988	33	587	339	65	677	425
1989	33	600	348	57	668	412
1990	34	613	358	45	648	393
1991	35	624	366	47	660	401
1992	36	637	375	48	674	412
1993	36	648	383	50	685	420
1994	37	659	391	49	696	430

T5913/10-2-81

Note: Projections are presented to the nearest job only for convenience in review and do not imply this level of accuracy.

Source: University of Utah, 1980b.



4433 B

SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

Figure 2.1.3.4-1. Proposed Ely OB and area of analysis (AOA).

#### Recent Labor Force Trends (2.1.3.4.2)

##### White Pine County (2.1.3.4.2.1)

The county has recently experienced a sizable economic downturn because of reduced copper mining and smelting. Kennecott Copper Corporation ceased mining operations at locations in White Pine and Lyon counties, eliminating about 1,000 jobs. Table 2.1.3.4-1 shows the decrease in labor force due to unemployed workers leaving the county. The county labor force peaked in 1974 and 1975 at 4,260 and 4,220 persons, respectively, and then sharply declined by 200-400 workers per year through 1979. The size of the county's civilian labor force stabilized in 1979-1980 at about 3,100 workers, or 1,100 less than the 1974-1975 level.

Reductions in county employment levels on a labor force basis (also in Table 2.1.3.4-1) are the cause of labor force decreases over the past seven years. Employment peaked in 1974 at 4,060 workers and dropped to 2,780 by 1979. The 1980 county employment level increased to 2,900 workers, or a gain of 4 percent over 1979.

White Pine County unemployment has been substantially above state and national levels since the layoffs in the county's copper industry in the mid-1970s. The local unemployment rate reached 23.5 percent in 1976, and averaged 12.2 percent over the six years from 1975 to 1980. The 1980 figure of 7.6 percent represents the first significant reduction in White Pine County unemployment rate below double-digit levels since 1974. Nevertheless, 1980 unemployment in the county was substantially above the Nevada rate of 6.2 percent and the U.S. rate of 7.1 percent.

#### Sectoral Employment Trends (2.1.3.4.3)

##### White Pine County (2.1.3.4.3.1)

Table 2.1.3.4-2 shows recent trends in employment in White Pine County by industrial sector. These data are initially compiled by the Nevada Employment Security Department and are adjusted by the U.S. Bureau of Economic Analysis to include proprietors and farm employment. These figures show employment by place of work and indicate the number of jobs within the county. The table differs from Table 2.1.3.4-1, which reflects employment by place of residence and shows the number of employed persons living in the county. The data in Table 2.1.3.4-2 may include people who live outside the county as well as multiple job-holders.

Table 2.1.3.4-3 presents 1979 and 1980 nonagricultural wage and salary employment in White Pine County. These are the most recent annual averages available from Nevada Employment Security Department; however, they are not strictly comparable to the BEA/REIS data since different industrial sector classifications are used by the two agencies. See Section 2.1.1.3.1 for a full description of the sources and characteristics of these data.

Total employment in White Pine County dropped by over 1,000 jobs between 1974 and 1979, mainly due to the significant decrease in mining sector. In 1974, the mining industry was the largest employment sector, but has since declined considerably. Jobs in the White Pine County mining sector have dropped from 1,100

Table 2.1.3.4-1. Population, labor force, employment, and unemployment, 1968-1980, in White Pine County, Nevada.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975- 1980 AVERAGE
POPULATION	9074	10067	10150	10000	10300	10001	10000	10100	9796	8841	8743	9044	8184	9118
LABOR FORCE	4010	4200	4170	4210	4200	4050	4260	4220	4040	3860	3550	3110	3140	3653
L F PARTICIPATION	44.2	41.7	41.1	42.1	40.8	40.5	42.6	41.8	41.2	43.7	40.6	34.4	38.4	40.0
RATE	3540	4020	4000	3980	3950	3840	4060	3790	3090	3490	3130	2780	2900	3196
EMPLOYMENT	470	180	170	230	250	210	200	430	950	370	420	330	240	456
UNEMPLOYMENT RATE	11.7	4.3	4.1	5.5	6.0	5.2	4.7	10.2	23.5	9.6	11.8	10.6	7.6	12.2
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY														CT0101
24-APR-81														

TABLE 2.1.3.4-2. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

WHITE PINE	NEVADA	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT		4390	4078	3411	3800	3621	3360
NUMBER OF PROPRIETORS		362	341	335	341	336	345
FARM PROPRIETORS		99	78	79	78	71	70
NON-FARM PROPRIETORS		263	263	256	263	265	275
TOTAL WAGE AND SALARY EMPLOYMENT		4028	3737	3076	3459	3285	3015
FARM		91	91	107	103	111	103
NON-FARM		3937	3646	2969	3356	3174	2912
PRIVATE		3129	2806	2142	2525	2329	2075
AG. SERV., FOR., FISH., AND OTHER		(L)	(L)	(D)	(D)	(D)	(L)
MINING		1104	964	495	680	408	203
CONSTRUCTION		92	73	(D)	(D)	(D)	105
MANUFACTURING		505	357	229	294	340	301
NON-DURABLE GOODS		(D)	(D)	18	21	(D)	(D)
DURABLE GOODS		(D)	(D)	211	273	(D)	(D)
TRANSPORTATION AND PUBLIC UTILITIES		242	238	226	226	223	252
WHOLESALE TRADE		70	79	63	60	57	51
RETAIL TRADE		631	614	562	631	638	619
FINANCE, INSURANCE, AND REAL ESTATE		66	67	71	83	79	85
SERVICES		415	407	427	462	466	451
GOVERNMENT AND GOVERNMENT ENTERPRISES		808	840	827	831	845	837
FEDERAL, CIVILIAN		99	119	116	130	140	156
FEDERAL, MILITARY		72	68	61	45	45	42
STATE AND LOCAL		637	653	650	656	660	639

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



Table 2.1.3.4-3. Nonagricultural wage and salary employment by industrial sector, White Pine County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	2,840	3,120	9.9
Mining	210	339	61.4
Construction	110	243	120.9
Manufacturing	310	343	10.6
Transportation, Communication and Public Utilities	200	170	-15.0
Trade	670	680	1.5
Finance, Insurance and Real Estate	80	82	2.5
Services and Miscellaneous	460	489	6.3
Government	810	774	-4.4

T5651/8-25-81

Source: Nevada Employment Security Department,  
1980; 1981.

in 1974 to 200 in 1979. Manufacturing employment also declined over that period from 500 to 300 jobs.

Currently, the major industrial sectors are government, trade, and services, in that order. Figure 2.1.3.4-2 indicates that these sectors supplied nearly three-fifths of the total county employment in 1979. These three industries have remained relatively stable throughout the study period.

#### Projected Employment (2.1.3.4.4)

Employment projections for White Pine County under both trend-growth and high-growth conditions are presented in Section 2.1.1.4. The largest prospective non-M-X development in the county is the White Pine Power Project (WPPP). This project includes the construction and operation of a 1,350 MW coal-fired power plant, scheduled to begin in 1984. If realized, this project would peak in 1987, generating an expected 2,800 new jobs. This growth would be roughly 94 percent of total county employment of 3,000 jobs in 1987. In the long run, 1,700 jobs would be created.

Table 2.1.3.4-4 presents trend-growth and high-growth employment projections for the three sectors of White Pine County which would be significantly affected by M-X deployment--construction, trade, and services. The projections (from the Bureau of Economic and Business Research, University of Utah) imply modest growth in each of these sectors under trend-growth conditions. The high-growth projection, reflecting the impact of the White Pine Power Project, indicates a rapid increase in employment in each sector, followed by a significant decline. This trend would be most pronounced in the construction sector.

#### **Milford (2.1.3.5)**

##### Introduction (2.1.3.5.1)

The site for the Milford operating base (OB) option is in Beaver County, Utah, in the eastern portion of the Nevada/Utah Region of Influence (ROI), as shown in Figure 2.1.3.5-1. The Area of Analysis (AOA) for the Milford OB includes Beaver, Iron, and Millard counties. The proposed site is located approximately 10 mi southwest of the town of Milford. Under the proposed action, Milford would be the site of the second OB. Milford would also be the site for the first OB under alternatives 5 and 6. Other potential OB sites are Coyote Spring, and Ely, Nevada; Beryl and Delta, Utah; Clovis, New Mexico; and Dalhart, Texas.

Historic and projected employment and labor force trends are presented in the Beryl analysis, Section 2.1.3.1, for Beaver and Iron counties and in the Delta analysis, Section 2.1.3.3, for Millard County.

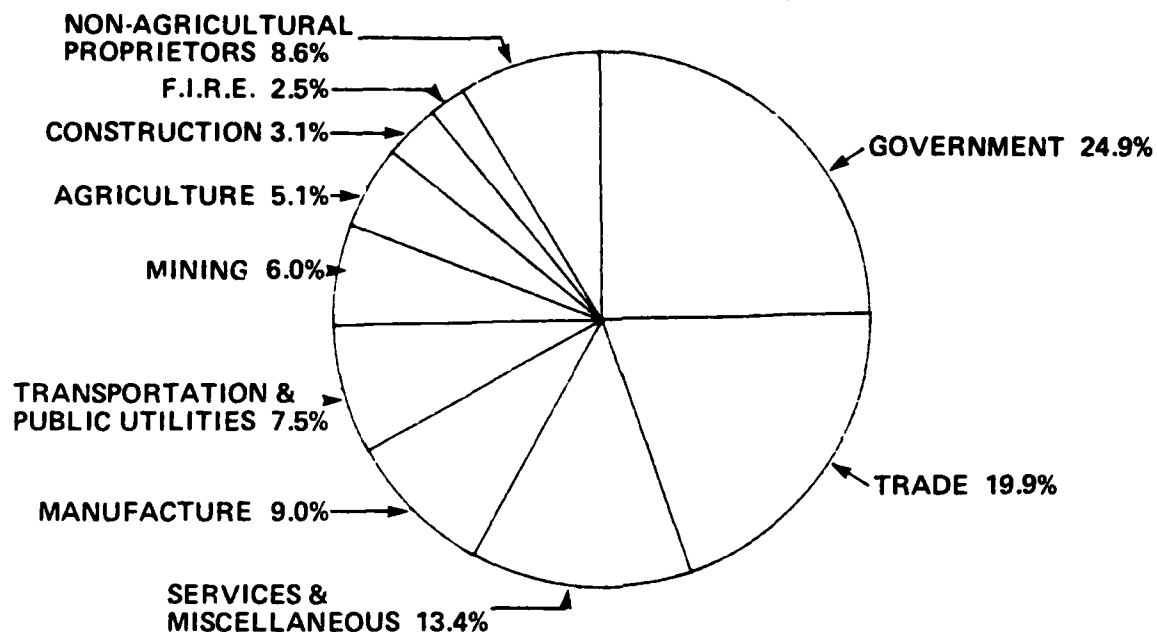
#### **Clovis (2.1.3.6)**

##### Introduction (2.1.3.6.1)

The site for the Clovis operating base (OB) option is in Curry County, New Mexico, in the central part of the Texas/New Mexico Region of Influence (ROI), as shown in Figure 2.1.3.6-1. The Area of Analysis (AOA) for the Clovis OB consists of

## WHITE PINE COUNTY NEVADA

1979 TOTAL EMPLOYMENT = 3,360



Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

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Figure 2.1.3.4-2. Employment by type and broad industrial sources, White Pine County, 1979.

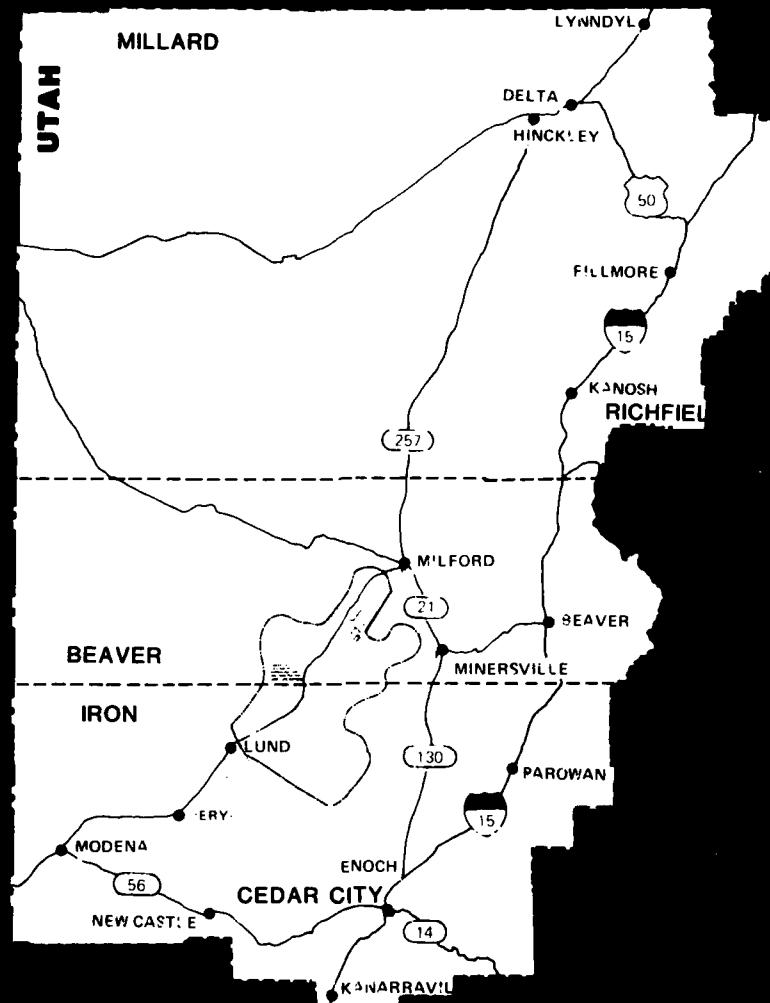
Table 2.1.3.4-4. Projected employment in construction, trade, and services in White Pine County under trend-growth and high-growth conditions, 1982-1994 (number of jobs).

Year	Trend-Growth			High-Growth		
	Construction	Trade	Services	Construction	Trade	Services
1982	71	239	448	71	239	449
1983	73	244	465	73	244	466
1984	75	250	481	164	257	493
1985	78	257	500	601	411	703
1986	80	262	513	1,240	474	791
1987	82	267	526	1,843	538	896
1988	84	272	538	1,421	519	874
1989	86	278	552	644	475	817
1990	88	285	566	161	442	781
1991	90	290	581	161	458	814
1992	92	296	594	164	460	827
1993	95	301	609	172	472	847
1994	97	307	623	175	481	874

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Note: Projections are presented to the nearest job only for convenience in review and do not imply this level of accuracy.

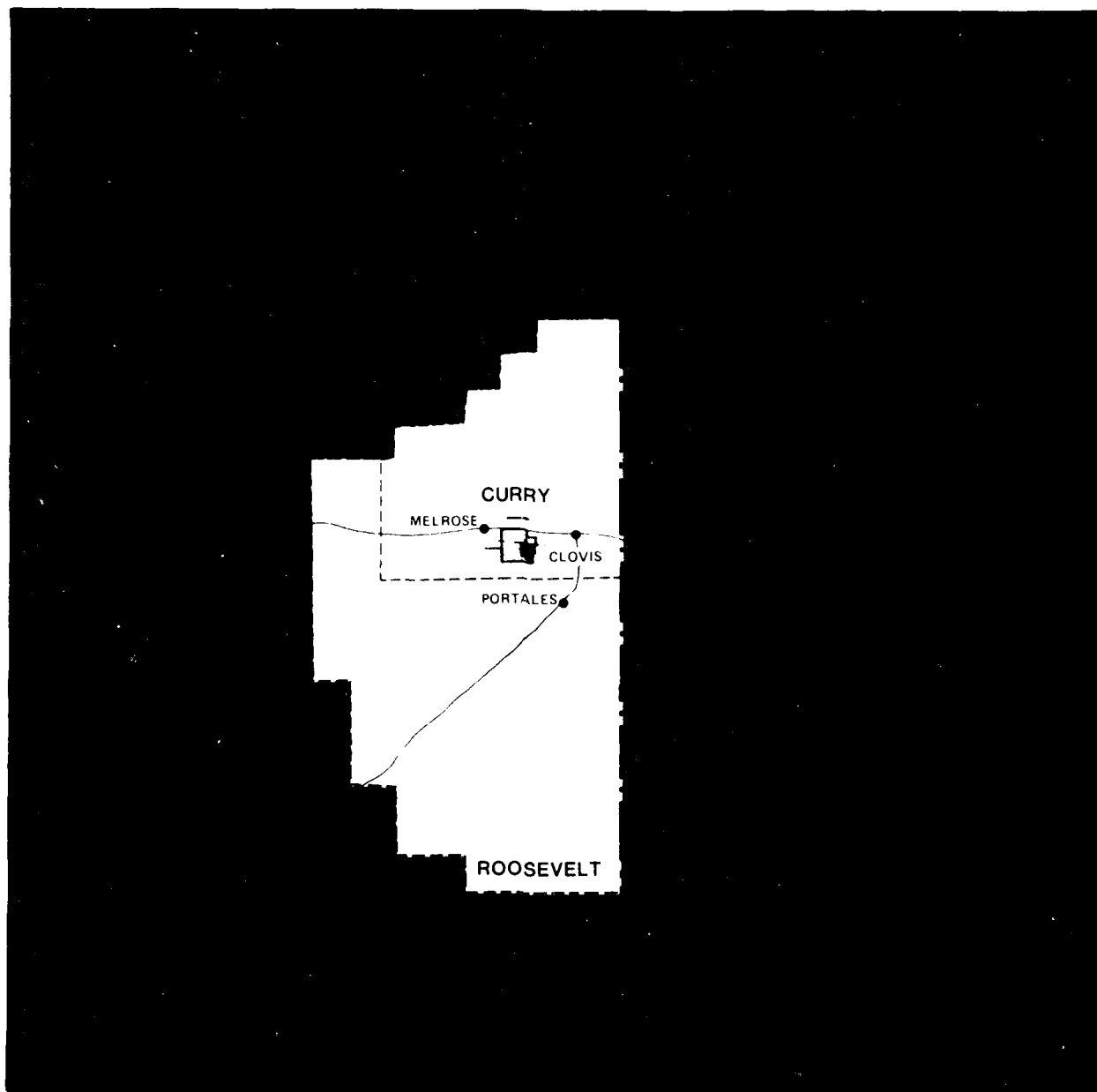
Source: University of Utah, 1980b.



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SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE, BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

Figure 2.1.3.5-1. Proposed Milford OB and area of analysis (AOA).



SOURCE: HDR SCIENCES, BASED ON INFORMATION FROM THE DEPARTMENT OF THE AIR FORCE,  
BMO (AFSC), AND OTHER FEDERAL AND STATE AGENCIES.

Figure 2.1.3.6-1. Proposed Clovis OB and area of analysis (AOA).

Curry and Roosevelt counties. Clovis and Cannon AFB are major activity centers within the AOA. The Clovis OB would be built at the site of Cannon Air Force Base, with significant extension of its boundaries. Clovis would be the site of the first OB under Alternative 7 (full Texas/New Mexico deployment) and the second OB under Alternative 8 (split deployment). Other potential OB sites are at Coyote Spring and Ely, Nevada; Delta, Beryl, and Milford, Utah; and Dalhart, Texas.

Following the U.S. Civil War, dry farming and cattle and sheep ranching became major economic activities in Curry County. The county economy remained dependent on these two activities until Cannon Air Force Base was built near Clovis. The population of Clovis quickly increased and the economy of the small farm town was transformed to provide goods and services to military personnel.

Employment in Curry County is dominated by the government sector. Much of this employment is related to Cannon Air Force Base. Other significant employment sectors are services, manufacturing, and agriculture. Although the agricultural sector provides only 6 percent of the employment in Curry County, farming is, nevertheless, an important part of the area's economy and lifestyle. Over 95 percent of the land in the county is devoted to agriculture, two-thirds of which is cropland and the other one-third range. Curry County produces more corn, wheat, and sorghum than any other county in New Mexico. Land ownership in the AOA is predominately private, with over 90 percent of the land in the county being privately owned. Approximately 7 percent of the land in the AOA is owned by the state of New Mexico.

Roosevelt County's economic development has been similar to that of Curry County. Agriculture has been the economic base of the county throughout the past century and the Air Force installation near Clovis also enhanced growth in Portales.

#### Recent Labor Force Trends (2.1.3.6.2)

##### Curry County (2.1.3.6.2.1)

The labor force in Curry County grew from 11,400 in 1968 to 15,100 in 1977, and then declined to 14,400 in 1980 (Table 2.1.3.6-1). This represents an increase in the labor force of 26 percent between 1968 and 1980. Employment levels in the county shadowed the labor force trends during this period, increasing from 11,100 workers in 1968 to 13,500 in 1980. The highest level of employment occurred in 1978 when 14,285 workers living in the county were employed. County unemployment levels was particularly high in 1972, 1975, and 1980 when 630, 1,030, and 900 persons were without work in those respective years. The unemployment rate averaged 6.0 percent between 1975 and 1980.

##### Roosevelt County (2.1.3.6.2.2)

The labor force in Roosevelt County increased from 6,200 persons in 1968 to 7,300 in 1980. Table 2.1.3.6-2 indicates that the size of the labor force peaked in 1978 when 7,500 persons within the county were either working or looking for work. The county employment level also peaked during 1978 at 7,200. In 1980, 7,000 county residents were employed.

Table 2.1.3.6-1. Population, labor force, employment, and unemployment, 1968-1980, in Curry County, New Mexico.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975-1980 AVERAGE
POPULATION	35600	38000	37500	41500	41900	42600	42800	43300	40700	41100	41600	42100	42150	41858
LABOR FORCE	11379	11674	11337	12017	12751	13504	14169	14139	14472	15096	14977	14654	14370	14618
L.F. PARTICIPATION RATE	32.0	30.7	28.7	29.0	30.4	31.7	33.1	32.7	35.4	36.7	36.0	34.8	34.1	34.9
EMPLOYMENT	11065	11318	10816	11416	12124	12885	13425	13114	13559	14195	14285	13859	13475	13747
UNEMPLOYMENT	314	356	523	601	627	619	744	1025	913	901	692	795	895	870
UNEMPLOYMENT RATE	2.8	3.0	4.6	5.0	4.9	4.6	5.3	7.2	6.3	6.0	4.6	5.4	6.2	6.0
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY 24-APR-81	CT0109													

Table 2.1.3.6-2. Population, labor force, employment, and unemployment, 1968-1980, in Roosevelt County, New Mexico.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1975-1980 AVERAGE
POPULATION	16500	16500	16500	16700	17000	16900	17100	16600	16500	16700	16600	16600	15671	16445
LABOR FORCE	6164	6354	6124	6435	6316	6828	7270	6235	6994	7037	7465	7445	7267	7073
L.F. PARTICIPATION RATE	37.4	38.5	37.1	38.5	37.2	40.4	42.5	37.6	42.4	42.1	45.0	44.8	46.4	43.0
EMPLOYMENT	5971	6136	5770	6069	6066	6591	6956	5906	6715	6779	7215	7198	7005	6803
UNEMPLOYMENT	193	218	354	366	250	237	314	329	279	258	250	247	262	270
UNEMPLOYMENT RATE	3.1	3.4	5.8	5.7	4.0	3.5	4.3	5.3	4.0	3.7	3.3	3.3	3.6	3.9
SOURCE: STATE DEPARTMENT OF EMPLOYMENT SECURITY 24-APR-81	C10113													



Unemployment levels were highest during 1970, 1971, and 1975, when 354, 366, and 329 persons in Roosevelt County were without work. Those were the only three years that the unemployment rate was above 4.3 percent. In 1980, 262 persons in the county were unemployed comprising 3.6 percent of the labor force.

#### Sectoral Employment Trends (2.1.3.6.3)

Tables 2.1.3.6-3 and 2.1.3.6-4 detail employment by industrial sector in Curry and Roosevelt counties, respectively. These employment statistics are tabulated by state employment security departments and then adjusted by the BEA so that similar categorical assumptions of industrial sectors are made throughout the country. These figures reflect employment by place of work, and are basically a survey of the number of jobs within a county. Tables 2.1.3.6-1 and 2.1.3.6-2 reflect employment by place of residence and are basically a survey of the amount of people living in the county with one or more jobs. Since the employment by place of work tabulations will include people who live outside the county and multiple job holders will be counted two or more times (depending on how many jobs they hold), the total employment estimate in the following employment tables will differ somewhat from total employment in Tables 2.1.3.6-1 and 2.1.3.6-2.

Tables 2.1.3.6-5 and 2.1.3.6-6 present 1979 and 1980 nonagricultural wage and salary employment in Curry and Roosevelt counties, respectively. These are the most recent annual averages available from New Mexico Employment Security Department; however, they are not strictly comparable to the BEA/REIS data since different industrial sector classifications are used by the two agencies. See Section 2.1.1.3.1 and 2.1.2.3.1 for a full description of the sources and characteristics of these data.

#### Curry County (2.1.3.6.3.1)

Total employment on an establishment basis in the county equalled 18,400 jobs in 1979 (Table 2.1.3.6-3). This decline of 260 jobs from the county's 1974 total employment was the result of a sharp loss of 600 jobs over the 1974-1975 period. These losses were concentrated in federal military and federal civilian jobs. Other employment sectors which declined slightly over this five year period included agricultural services, mining, manufacturing, and services. The remaining sectors experienced job growth, with average annual growth of 11.3 percent posted in wholesale trade, the largest rate of increase.

Figure 2.1.3.6-2 presents 1979 employment shares by industrial sector in Curry County. In order of their relative size, government, comprising 35 percent of all county jobs in 1979, retail trade, 17 percent, and services, 11 percent, have been the most important sources of jobs. This economic structure is indicative of the county's heavy dependence on Cannon AFB, both for direct jobs and indirect employment in supplier industries. The farm industry is also important. Combining farm proprietors and farm wage and salary employment, this sector comprised 7 percent of total county employment in 1979.

#### Roosevelt County (2.1.3.6.3.2)

Total employment in the county on an establishment basis equalled 6,100 jobs in 1979 (Table 2.1.3.6-4). Of this total, 17 percent were held by farm proprietors.

TABLE 2.1.3.6-3. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

CURRY	NEW MEXICO									
	1974	1975	1976	1977	1978	1979				
TOTAL EMPLOYMENT	18638	18047	18012	18065	18496	18381				
NUMBER OF PROPRIETORS	2061	2053	1984	2101	2131	2189				
FARM PROPRIETORS	724	708	716	757	731	717				
NON-FARM PROPRIETORS	1337	1345	1268	1344	1400	1472				
TOTAL WAGE AND SALARY EMPLOYMENT	16577	15994	16028	15964	16365	16192				
FARM	395	410	410	410	420	528				
NON-FARM	16182	15584	15618	15554	15945	15664				
PRIVATE	8913	8461	8793	8916	9113	9165				
AG. SERV., FOR., FISH., AND OTHER	160	56	71	86	64	68				
MINING	19	13	12	16	16	14				
CONSTRUCTION	582	535	637	627	711	697				
MANUFACTURING	958	829	918	924	914	937				
NON-DURABLE GOODS	870	729	787	787	776	778				
DURABLE GOODS	88	100	131	137	138	159				
TRANSPORTATION AND PUBLIC UTILITIES	1199	1133	1164	1171	1225	1208				
WHOLESALE TRADE	326	587	604	597	638	620				
RETAIL TRADE	3053	2842	2897	2981	3055	3087				
FINANCE, INSURANCE, AND REAL ESTATE	533	527	542	563	552	578				
SERVICES	2083	1939	1948	1951	1938	1956				
GOVERNMENT AND GOVERNMENT ENTERPRISES	7269	7123	6825	6638	6832	6499				
FEDERAL, CIVILIAN	995	957	868	853	845	825				
FEDERAL, MILITARY	4581	4484	4285	4155	4397	4115				
STATE AND LOCAL	1693	1682	1672	1630	1590	1559				

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U. S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.6-4. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

ROOSEVELT	NEW MEXICO					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	6098	6101	6291	5776	5819	6088
NUMBER OF PROPRIETORS	1699	1651	1657	1746	1745	1759
FARM PROPRIETORS	1037	1009	1020	1080	1044	1023
NON-FARM PROPRIETORS	662	642	637	666	701	736
TOTAL WAGE AND SALARY EMPLOYMENT	4399	4450	4634	4030	4104	4329
FARM	378	393	393	393	403	506
NON-FARM	4021	4057	4241	3637	3701	3823
PRIVATE	1997	2056	2212	2241	2286	2353
AG. SERV., FOR., FISH., AND OTHER	86	53	53	66	66	(D)
MINING	(L)	0	13	12	50	(D)
CONSTRUCTION	141	144	164	148	151	166
MANUFACTURING	186	198	216	221	236	235
NON-DURABLE GOODS	168	191	206	214	230	223
DURABLE GOODS	18	(L)	10	(L)	(L)	(L)
TRANSPORTATION AND PUBLIC UTILITIES	218	230	234	246	244	245
WHOLESALE TRADE	189	239	256	228	222	226
RETAIL TRADE	659	664	734	807	806	816
FINANCE, INSURANCE, AND REAL ESTATE	148	158	154	137	135	127
SERVICES	365	370	388	376	376	405
GOVERNMENT AND GOVERNMENT ENTERPRISES	2024	2001	2029	1396	1415	1470
FEDERAL, CIVILIAN	67	56	57	74	73	80
FEDERAL, MILITARY	131	114	106	96	94	112
STATE AND LOCAL	1826	1831	1866	1226	1248	1278

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.1.3.6-5. Nonagricultural wage and salary employment by industrial sector, Curry County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	11,349	11,153	-1.7
Mining	-1	-1	-
Construction	695	565	-18.7
Manufacturing	937	961	2.6
Transportation, Communication and Public Utilities	1,228	1,136	-7.5
Trade	3,701	3,601	-2.7
Finance, Insurance and Real Estate	569	570	0.2
Services and Miscellaneous	1,780	1,828	2.7
Government	2,439	2,493	2.2

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<sup>1</sup> Disclosed information - included in "Services and Miscellaneous."

Source: New Mexico Employment Security Department,  
1980; 1981.

Table 2.1.3.6-6. Nonagricultural wage and salary employment by industrial sector, Roosevelt County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	4,386	4,377	-0.2
Mining	1	1	-
Construction	167	130	-22.2
Manufacturing	235	251	6.8
Transportation, Communication and Public Utilities	247	236	-4.5
Trade	1,041	1,012	-2.8
Finance, Insurance and Real Estate	125	116	-7.2
Services and Miscellaneous	455	452	-0.7
Government	2,117	2,181	3.0

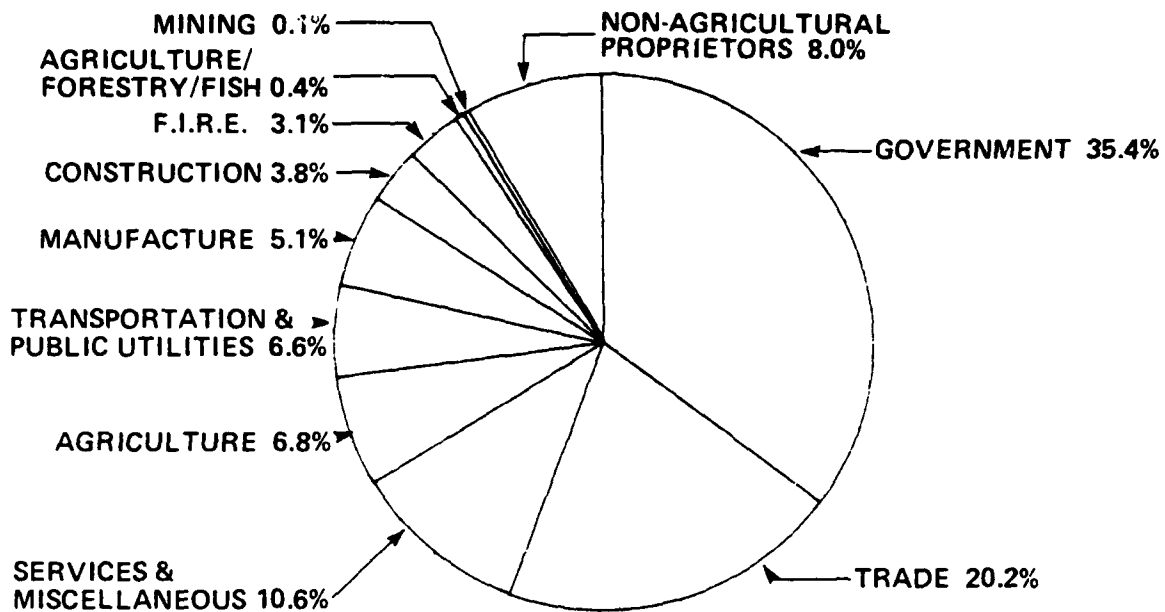
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<sup>1</sup>Disclosed information - included in "Services and Miscellaneous."

Source: New Mexico Employment Security Department,  
1980; 1981.

## CURRY COUNTY NEW MEXICO

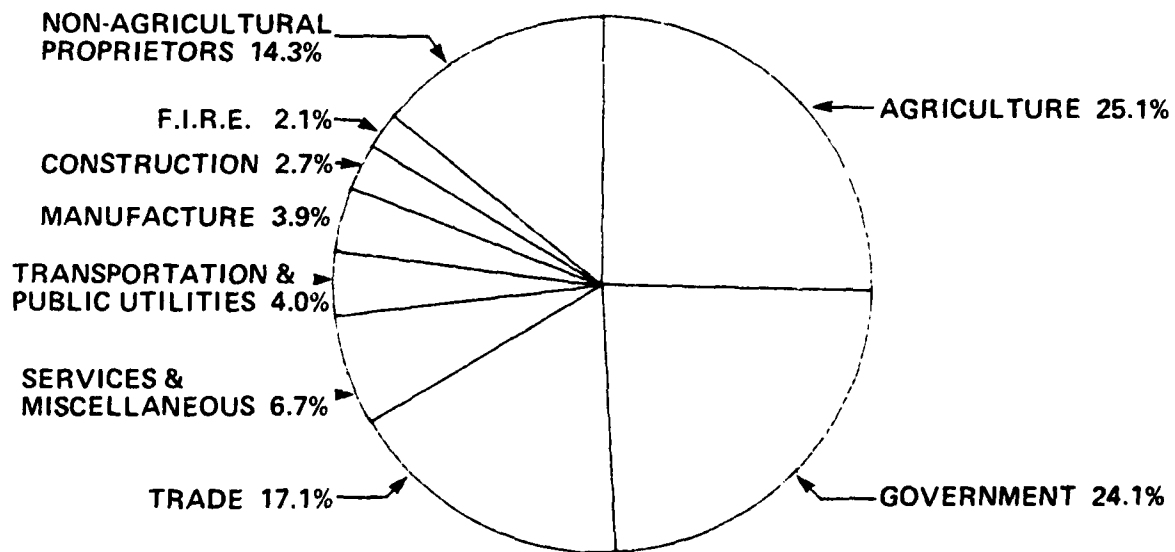
1979 TOTAL EMPLOYMENT = 18,381



CA-0444-A-1

## ROOSEVELT COUNTY NEW MEXICO

1979 TOTAL EMPLOYMENT = 6,088



CA-0443-A

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.3.6-2. Employment by type and broad industrial sources, Curry and Roosevelt counties, 1979.

The total employment figure is almost identical to that posted in the county in 1974. However, during this period, 550 jobs were lost in the government sector, exclusively in state and local government. There was also a modest reduction of 21 jobs in the finance, insurance, and real estate industry. Counterbalancing these secular declines, other employment sectors experienced job growth, with average annual growth of 4.4 percent posted in retail trade, the largest rate of increase over the 1974-1979 period.

As indicated in Figure 2.1.3.6-2, in order of their relative size, the farm sector (including proprietor plus wage and salary jobs), comprised 25 percent of all county jobs in 1979. The government sector comprised 24 percent, and retail trade, 13 percent. This economic structure is indicative of the rural nature of the county, reflecting its heavy dependence on farming and government both for direct jobs and indirect employment.

#### Projected Employment (2.1.3.6.4)

Employment projections for Curry and Roosevelt counties are presented in Section 2.1.2.4. Sectoral employment projections analogous to those presented in previous sections are not available for Curry and Roosevelt counties.

#### Dalhart (2.1.3.7)

##### Introduction (2.1.3.7.1)

The site for the Dalhart operating base (OB) option is in the northern section of the Texas/New Mexico Region of Influence (ROI) as shown in Figure 2.1.3.7-1. The OB would be located 15 mi southwest of the town of Dalhart. The Area of Analysis (AOA) for this OB siting option includes Dallam, Hartley, and Moore counties. The Dalhart OB would be built only under Alternative 7 (full Texas/New Mexico deployment), in which case it would be the second OB. Other OB site options are Clovis, New Mexico; Coyote Spring and Ely, Nevada; and Beryl, Delta, and Milford, Utah. This section describes the important human and natural environmental characteristics of the AOA.

After the U.S. Civil War, dry farming and cattle and sheep ranching were the major economic activities in Dallam County. Since then, agriculture has remained the major economic base for the county. The trade, services, and government sectors also provide much employment in the county, mostly in the city of Dalhart. There has also been recent economic growth in the manufacturing sector.

With a population of approximately 6,800, Dalhart is the only town in the AOA with a population of more than 500 persons. Agriculture provides the largest share of employment in the AOA, with services and government contributing a significantly smaller share.

Dry farming and ranching were the main economic activities in Hartley County during the late 1800s and early 1900s. Grains are currently the chief agricultural product of the county. The services and government sectors also provide some employment, mostly in the city of Hartley.





Moore County experienced economic development similar to Dallam and Hartley counties over the past century—mainly in agriculture. Dumas is the major town in the county and provides most of the nonagricultural employment. Major industrial sectors in Moore County are manufacturing, trade, government, transportation, and public facilities.

#### Recent Labor Force Trends (2.1.3.7.2)

##### Dallam County (2.1.3.7.2.1)

The labor force in Dallam County dropped significantly in 1976 and 1977, but rebounded in the following years. Table 2.1.3.7-1 indicates that in 1976 the county labor force decreased by 600 persons from the previous year. After this sharp decline, the labor force in Dallam County rebounded to its 1974-1975 level of 2,500 workers. The county employment level mirrored the labor force decline in 1976 and 1977, dropping to 1,860 and 1,910 workers, respectively. In 1980, 2,270 county residents were employed.

The number of unemployed has ranged between 60 persons in 1974 and 110 in 1980. In 1977, the unemployment rate reached 4.5 percent, its highest level in the 1974 to 1980 period. The annual average unemployment rate was 3.5 percent over the period.

##### Hartley County (2.1.3.7.2.2)

The size of the labor force in Hartley County showed a significant drop in 1976 and 1977. Table 2.1.3.7-2 shows that the number of workers in the county dropped below 1,000 in 1976 and 1977 and then increased in the following three years to more than 1,200 persons. The number of employed persons dropped below 1,000 during those two years. In 1980, 1,190 persons living within the county were employed.

The number of unemployed workers has remained relatively stable over the seven-year period, ranging between 20 persons in 1977 and 35 in 1974. Since 1976, the unemployment rate has been below 3.0 percent.

##### Moore County (2.1.3.7.2.3)

The labor force in Moore County has increased over the past seven years, from 6,210 workers in 1974 to 7,300 in 1980. Table 2.1.3.7-3 shows that slight decreases in the number of available workers occurred in 1975 and 1979. The county labor force and employment levels both peaked in 1978 at 7,480 and 7,160 persons, respectively. In 1980, 6,990 persons living in Moore County were employed.

The number of unemployed in the county peaked at 30 in 1975, the only year the unemployment rate rose above 5.0 percent during the seven-year study period. In 1980, 310 county residents, or 4.2 percent of the labor force, were unemployed.

#### Sectoral Employment Trends (2.1.3.7.3)

Tables 2.1.3.7-4 through 2.1.3.7-6 detail employment by industrial sector in Dallam, Hartley, and Moore counties, respectively. These tables reflect employ-

Table 2.1.3.7-1. Population, labor force, employment, and unemployment, 1974-1980, in Dallam County, Texas.

	1974	1975	1976	1977	1978	1979	1980	AVERAGE
POPULATION	6300	6400	6600	6700	6700	N/A	6555	6542
LABOR FORCE	2492	2529	1930	2002	2450	2526	2522	2350
L F. PARTICIPATION RATE	39.6	39.5	29.2	29.9	36.6	N/A	38.5	35.5
EMPLOYMENT	2428	2459	1855	1911	2367	2447	2413	2268
UNEMPLOYMENT	64	70	75	91	83	79	109	81
UNEMPLOYMENT RATE	2.6	2.8	3.9	4.5	3.4	3.1	4.3	3.5

(N/A) NOT AVAILABLE  
SOURCE: TEXAS EMPLOYMENT SECURITY COMMISSION  
24-APR-81 CT0118

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Table 2.1.3.7-2. Population, labor force, employment, and unemployment, 1974-1980, in Hartley County, Texas.

	1974	1975	1976	1977	1978	1979	1980	AVERAGE
POPULATION	3000	3200	3300	3400	3300	N/A	3976	3362
LABOR FORCE	1107	1093	949	975	1200	1232	1221	1111
L F. PARTICIPATION RATE	36.9	34.2	28.8	28.7	36.4	N/A	30.7	32.6
EMPLOYMENT	1072	1059	928	955	1166	1205	1189	1082
UNEMPLOYMENT	35	34	21	20	34	27	32	29
UNEMPLOYMENT RATE	3.2	3.1	2.2	2.1	2.8	2.2	2.6	2.6

(N/A) NOT AVAILABLE  
SOURCE: TEXAS EMPLOYMENT SECURITY COMMISSION  
24-APR-81 CT0121

Table 2.1.3.7-3. Population, labor force, employment, and unemployment, 1974-1980, in Moore County, Texas.

	1974	1975	1976	1977	1978	1979	1980	AVERAGE
POPULATION	13400	14000	14300	14900	15000	N/A	16565	14674
LABOR FORCE	6206	6193	6713	7401	7475	7409	7299	6956
L.F. PARTICIPATION RATE	46.3	44.2	46.9	49.7	49.8	N/A	44.1	46.8
EMPLOYMENT	6025	5865	6436	7116	7161	7131	6994	6675
UNEMPLOYMENT	181	328	277	285	314	278	305	281
UNEMPLOYMENT RATE	2.9	5.3	4.1	3.9	4.2	3.8	4.2	4.0
(N/A) NOT AVAILABLE								
SOURCE: TEXAS EMPLOYMENT SECURITY COMMISSION								
24-APR-81								
C10125								

TABLE 2.1.3.7-4. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

DALLAM	TEXAS						
	1974	1975	1976	1977	1978	1979	
TOTAL EMPLOYMENT	3462	3429	3503	3861	3906	3787	---
NUMBER OF PROPRIETORS	924	926	929	1005	1014	1033	---
FARM PROPRIETORS	425	417	407	408	397	386	---
NON-FARM PROPRIETORS	499	509	522	597	617	647	---
TOTAL WAGE AND SALARY EMPLOYMENT	2538	2503	2574	2856	2892	2754	---
FARM	635	620	634	635	627	600	---
NON-FARM	1903	1883	1940	2221	2265	2154	---
PRIVATE	1537	1506	1548	1829	1906	1829	---
AG. SERV., FOR., FISH., AND OTHER	(D)	17	24	28	(D)	(D)	---
MINING	(D)	(L)	(L)	(D)	(D)	(D)	---
CONSTRUCTION	105	80	79	87	56	80	---
MANUFACTURING	139	141	128	266	400	253	---
NON-DURABLE GOODS	(D)	134	123	250	(D)	227	---
DURABLE GOODS	(D)	(L)	(L)	16	(D)	26	---
TRANSPORTATION AND PUBLIC UTILITIES	171	178	183	193	207	233	---
WHOLESALE TRADE	215	309	352	309	278	279	---
RETAIL TRADE	401	358	353	441	461	389	---
FINANCE, INSURANCE, AND REAL ESTATE	97	104	112	114	124	136	---
SERVICES	383	317	313	347	336	393	---
GOVERNMENT AND GOVERNMENT ENTERPRISES	366	377	392	392	359	325	---
FEDERAL, CIVILIAN	44	49	46	48	50	52	---
FEDERAL, MILITARY	25	24	24	21	21	21	---
STATE AND LOCAL	297	304	322	323	288	252	---

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2 1 3 7-5 EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

HARTLEY	TEXAS	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT		1453	1358	1378	1458	1474	1470
NUMBER OF PROPRIETORS		284	280	277	279	270	266
FARM PROPRIETORS		239	234	229	230	222	217
NON-FARM PROPRIETORS		45	46	48	49	47	49
TOTAL WAGE AND SALARY EMPLOYMENT		1169	1078	1101	1179	1204	1204
FARM		671	655	670	671	663	634
NON-FARM		498	423	431	508	541	570
PRIVATE		396	326	333	380	392	405
AG. SERV. FOR . FISH . AND OTHER		15	(D)	(D)	(D)	42	47
MINING		(D)	0	0	0	0	0
CONSTRUCTION		(L)	(L)	0	(L)	15	(L)
MANUFACTURING		23	14	(L)	(D)	(L)	0
NON-DURABLE GOODS		(D)	(D)	(D)	0	0	0
DURABLE GOODS		(D)	(D)	(D)	(D)	(L)	0
TRANSPORTATION AND PUBLIC UTILITIES		66	64	69	(D)	74	81
WHOLESALE TRADE		34	59	45	41	50	57
RETAIL TRADE		163	21	31	49	53	59
FINANCE, INSURANCE, AND REAL ESTATE		0	0	(D)	0	0	(L)
SERVICES		(D)	(D)	150	168	157	153
GOVERNMENT AND GOVERNMENT ENTERPRISES		102	97	98	128	149	165
FEDERAL, CIVILIAN		13	11	10	11	13	15
FEDERAL, MILITARY		12	12	12	11	10	11
STATE AND LOCAL		77	74	76	106	126	139

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.  
 (D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U. S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.1.3.7-6. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES (FULL AND PART-TIME)

MOORE	TEXAS					
	1974	1975	1976	1977	1978	1979
TOTAL EMPLOYMENT	6465	6309	7003	7647	7867	7975
NUMBER OF PROPRIETORS	901	921	937	961	986	1012
FARM PROPRIETORS	322	316	309	309	300	292
NON-FARM PROPRIETORS	579	605	628	652	686	720
TOTAL WAGE AND SALARY EMPLOYMENT	5564	5388	6066	6686	6881	6963
FARM	813	794	813	814	804	769
NON-FARM	4751	4594	5253	5872	6077	6194
PRIVATE	3913	3767	4421	4961	5139	5232
AG. SERV. FOR ., FISH., AND OTHER	85	36	47	49	(D)	(D)
MINING	386	388	399	(D)	(D)	(D)
CONSTRUCTION	475	396	471	297	409	424
MANUFACTURING	745	672	1070	1480	1626	1649
NON-DURABLE GOODS	691	625	1040	1459	1588	1617
DURABLE GOODS	54	47	30	21	38	32
TRANSPORTATION AND PUBLIC UTILITIES	517	519	521	721	740	818
WHOLESALE TRADE	198	257	283	(D)	255	260
RETAIL TRADE	755	745	774	941	872	896
FINANCE, INSURANCE, AND REAL ESTATE	116	124	133	165	147	143
SERVICES	636	630	723	782	(D)	(D)
GOVERNMENT AND GOVERNMENT ENTERPRISES	838	827	832	911	938	962
FEDERAL, CIVILIAN	98	97	90	99	108	117
FEDERAL, MILITARY	54	54	51	47	47	48
STATE AND LOCAL	686	676	691	765	783	797

(L) LESS THAN 10 EMPLOYEES, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U. S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

ment by place of work and are a tabulation of the number of jobs within a county. In contrast, Tables 2.1.3.7-1 through 2.1.3.7-3 reflect employment by place of residence. They show the number of employed people living in the county. Since the employment by place of work table includes people who live outside the county and multiple job holders are counted by the number of jobs they hold, total employment in Tables 2.1.3.7-4 through 2.1.3.7-6 will differ from total employment figures in Tables 2.1.3.7-1 through 2.1.3.7-3.

Tables 2.1.3.7-7, 2.1.3.7-8, and 2.1.3.7-9 present 1979 and 1980 wage and salary employment in Dallam, Hartley, and Moore counties, respectively. These are the most recent annual averages available from Texas Employment Commission, however they are not strictly comparable to the BEA/REIS data since different industrial sector classifications are used by the two agencies. See Sections 2.1.1.3.1 and 2.1.2.3.1 for a full description of the sources and characteristics of these data.

#### Dallam County (2.1.3.7.3.1)

Total employment in the county equalled 3,790 jobs in 1979 (Table 2.1.3.7-4). About 28 percent were proprietor jobs, mostly in the nonfarm sector. The increase of 330 jobs from the county's 1974 total employment was the result of modest gains in most industrial sectors over the 1974 to 1979 period. Transportation and public utilities sectors posted small but steady gains from 1974 to 1979. Manufacturing employment showed a significant upward trend, though with sizable year-to-year fluctuations. Sectors with net reductions in employment were construction, retail trade, and state and local government.

Figure 2.1.3.7-2 indicates that the farm sector was the source of 26 percent of all county jobs in 1979, while retail trade and services each comprised 10 percent of the 1979 total. These sectors are the principal job sources. This economic structure reflects the county's heavy dependence on farming, both for direct jobs and for indirect employment in supplier industries. The balance of wage and salary jobs were more or less equally distributed among the remaining sectors.

#### Hartley County (2.1.3.7.3.2)

Total employment in this county equalled 1,470 jobs in 1979 (Table 2.1.3.7-5). Of this, about one-fifth of all jobs were held by proprietors, mostly in the farm sector. Total employment in 1979 was almost identical to that of 1974. Within this five-year period, jobs in services, wholesale trade, government, and transportation increased, while employment in retail trade fell from 160 to 60 jobs. Employment in the farm sector, both wage and salary and proprietor jobs, also fell slightly.

As indicated in Figure 2.1.3.7-2, the county's farm sector dominated the local economy, comprising about 60 percent of total employment in 1979. Government and service sectors have also been important, accounting for 11 percent and 10 percent, respectively, of 1979 total county employment. The agricultural character of the county's economy is highlighted by the absence of employment in mining, construction, and manufacturing.

Table 2.1.3.7-7. Wage and salary employment by industrial sector, Dallam County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	2,003	2,064	3.0
Agriculture, Forestry and Fishing	134	129	-3.7
Mining	- <sup>1</sup>	-	-
Construction	80	105	31.3
Manufacturing	251	257	2.4
Transportation, Communication and Public Utilities	139	138	-0.7
Trade	662	719	8.6
Finance, Insurance and Real Estate	135	134	-0.7
Services and Miscellaneous	289	274	-5.2
Government	314	308	-1.9

T5639/8-25-81

<sup>1</sup> When one or two employers comprise 80 percent or more of the employment for an individual sector, a dash (-) is shown; the employment for that sector is included in 'Services and Miscellaneous' so that information about individual establishments is not revealed.

Source: Texas Employment Commission, 1980; 1981.



Table 2.1.3.7-8. Wage and salary employment by industrial sector, Hartley County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	462	466	0.9
Agriculture, Forestry and Fishing	- <sup>1</sup>	-	-
Mining	0	0	0.0
Construction	-	-	-
Manufacturing	0	0	0.0
Transportation, Communication and Public Utilities	-	-	-
Trade	116	111	-4.3
Finance, Insurance and Real Estate	-	-	-
Services and Miscellaneous	169	179	5.9
Government	172	176	2.3

T5640/8-25-81

<sup>1</sup>When one or two employers comprise 80 percent or more of the employment for an individual sector, a dash (-) is shown; the employment for that sector is included in 'Services and Miscellaneous' so that information about individual establishments is not revealed.

Source: Texas Employment Commission, 1980; 1981.

Table 2.1.3.7-9. Wage and salary employment by industrial sector, Moore County, 1979 and 1980 annual averages.

Industrial Sector	1979	1980	1979-1980 Percentage Change
Total Employment	6,059	6,147	1.5
Agriculture, Forestry and Fishing	217	290	33.6
Mining	<sup>1</sup> -	-	-
Construction	421	221	-47.5
Manufacturing	-	-	-
Transportation, Communication and Public Utilities	759	758	-0.1
Trade	1,148	1,211	5.5
Finance, Insurance and Real Estate	143	141	-1.4
Services and Miscellaneous	2,427	2,532	4.3
Government	945	994	5.2

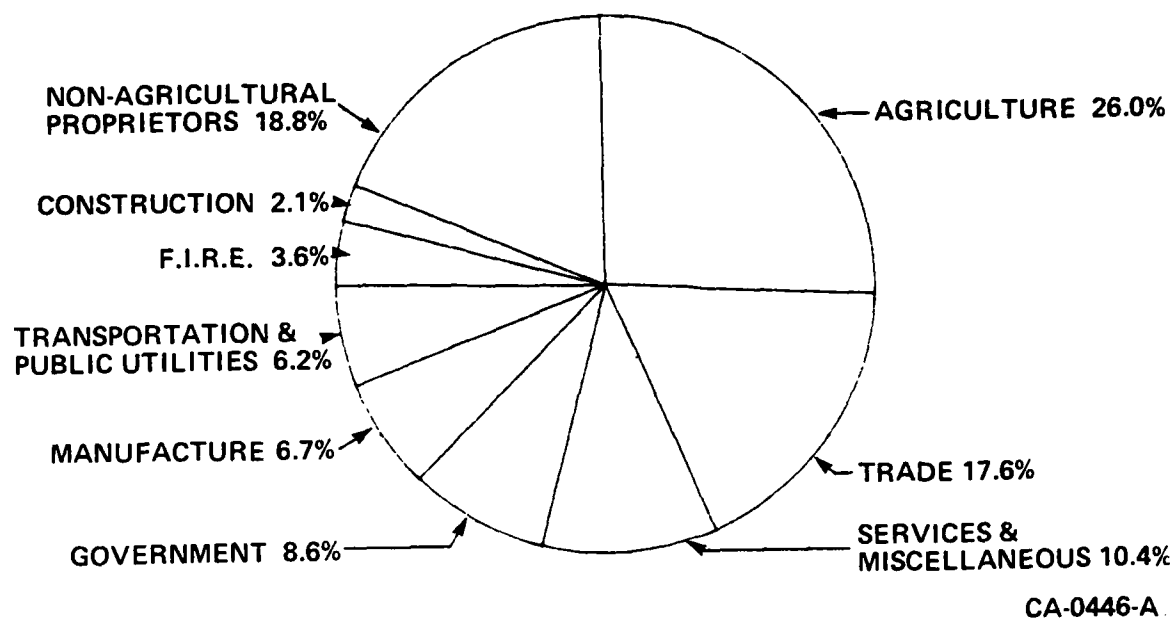
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<sup>1</sup> When one or two employers comprise 80 percent or more of the employment for an individual sector, a dash (-) is shown; the employment for that sector is included in 'Services and Miscellaneous' so that information about individual establishments is not revealed.

Source: Texas Employment Commission, 1980; 1981.

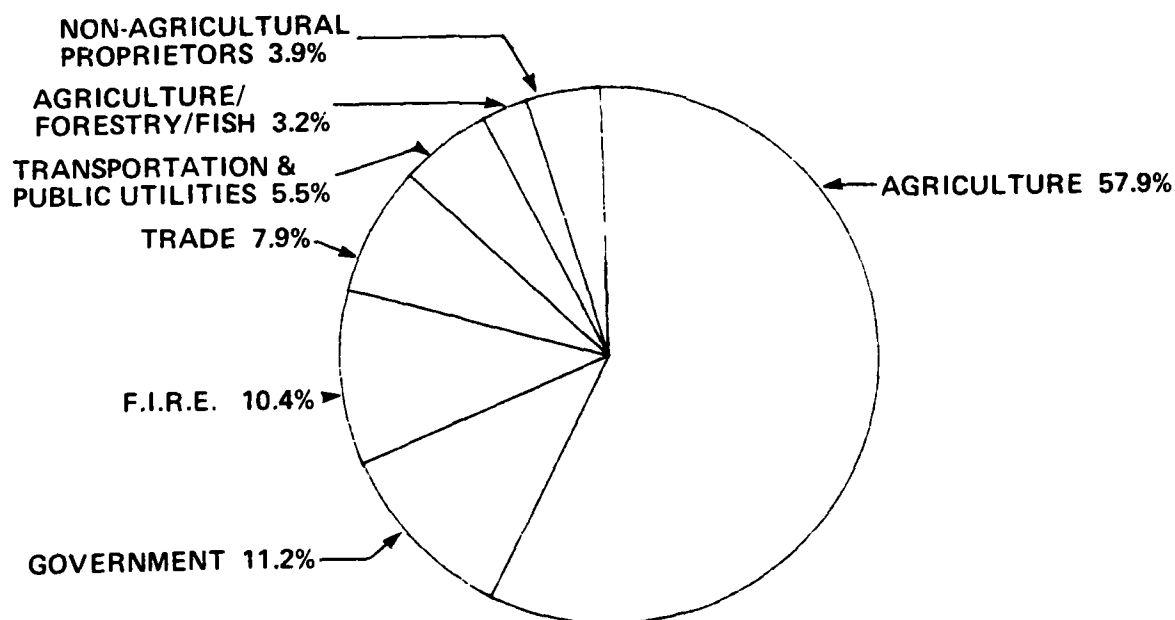
## DALLAM COUNTY TEXAS

1979 TOTAL EMPLOYMENT = 3,787



## HARTLEY COUNTY TEXAS

1979 TOTAL EMPLOYMENT = 1,470

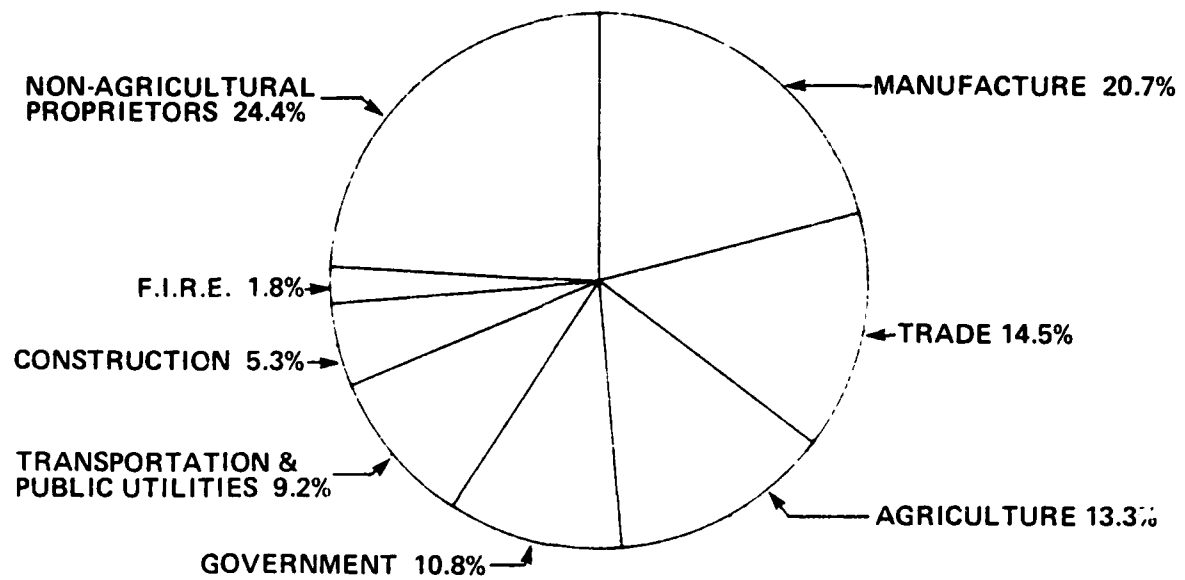


Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

Figure 2.1.3.7-2. Employment by type and broad industrial sources, Dallam, Hartley, and Moore counties, Texas, 1979 (page 1 of 2).

## MOORE COUNTY TEXAS

1979 TOTAL EMPLOYMENT = 7,975



Source: Bureau of Economic Analysis, Regional Economic Information System, 1981

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Figure 2.1.3.7-2. Employment by type and broad industrial sources, Dallam, Hartley, and Moore counties, Texas, 1979 (page 2 of 2).

#### Moore County (2.1.3.7.3.3)

Total employment in this county equalled 7,980 jobs in 1979 (Table 2.1.3.7-6). Of this, only about 13 percent were held by proprietors, with most in the nonfarm sector. Employment increased at an average annual rate of 4.3 percent from 1974 to 1979. This increase of 1,510 jobs was largely the result of a gain of 904 jobs in manufacturing. This represents 17.2 percent average annual growth rate in manufacturing. Growth was exclusively in the manufacture of non-durable goods. Employment growth was also registered in most other industrial sectors. The most important employment sectors in 1979 by percentage of jobs, are: manufacturing 21 percent; trade (retail and wholesale), 14 percent; farming, 13 percent; and government, 12 percent. These 1979 employment shares are shown in Figure 2.1.3.7-2.

#### Projected Employment (2.1.3.7.4)

Employment projections for Dallam, Hartley, and Moore counties are presented in Section 2.1.2.4. Sectoral employment projections analogous to those presented in previous sections are not available for Dallam, Hartley, and Moore counties.

### **WESTERN STATES REGION (2.1.4)**

#### **Introduction (2.1.4.1)**

Deployment of the M-X missile system in the sparsely populated areas of the western United States would likely have impacts distributed across many states and metropolitan areas. Construction and operation of the system would require the in-migration of large numbers of people into rural, lightly-populated areas. The project would create rapid, large demand growth for project personnel, which in turn would induce expansion of other employment sectors. The M-X project would also require many construction resources, e.g., water, cement, sand and gravel, asphalt, and energy both from local areas where possible, and from nearby regional trade and distribution centers. Studies in the FEIS concentrate on economic impacts in two bistate regions, Nevada/Utah and Texas/New Mexico. These geographic areas were selected since they would contain locations of all construction employment, as well as jobs for assembly and checkout of the system and operations personnel under the different project alternatives. Both the Nevada/Utah and the Texas/New Mexico regions include large, urban areas adjacent to rural deployment areas. Defined at the county level unit of analysis, these metropolitan areas in the two bistate regions would experience significant indirect employment growth as a result of the project. Numerous comments have been received from private citizens and public officials regarding the appropriateness of the bistate regions of influence. Specifically, many have questioned whether models used in the FEIS would capture the possible increase in demand for labor and other goods and services outside the bistate region. For example, the demand for cement could be sufficiently large to require importation from outside the Nevada/Utah region. Similar arguments would apply to many other construction resources and to the increased demand for goods and services to meet project workers' needs. It is on this basis that the western regional study was undertaken.

The western states region includes the 12 states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. Included within these states are some very large metropolitan areas, including Los Angeles, Denver, San Francisco, Houston, Salt Lake City, Phoenix, Seattle, and Las Vegas. With the exception of Salt Lake City, Utah and Las Vegas, Nevada and Amarillo and Lubbock, Texas, these metropolitan areas were outside the FEIS-defined regions of influence. Including effects across these 12 western states would likely capture economic impacts not modelled in the FEIS; relatively few goods and services and probably very little labor could not be supplied from a region this large.

This western regional study presents Bureau of Labor Statistics and Bureau of Economic Analysis Regional Economic Information System state level employment data for a historic profile of the region. Earnings and personal income are not included since they are driven by the same economic environment that affects employment. Baseline analysis includes a description of the states' civilian labor force, emphasizing the size of the employed work force and state level unemployment rates. Baseline employment projections for 1985 and 1990 for each of the 12 states are also presented and discussed, including a comparison of state level employment growth rates. Included within the discussion of baseline projections is a detailed analysis of energy futures, prepared by Abt/West, Inc. (1981) for the Western Governors' Policy Office (WESTPO) and a study by Mountain West Research (1981) for the Office of Economic Adjustment (OEA), "Manpower Impacts of M-X and Energy Development in the West." Impact analysis is focused on a study of the western region by Chase Econometrics (1981b), using Air Force-supplied project information. These impacts are assessed in terms of absolute employment growth that would result from M-X, and more importantly, as a percent increase over baseline forecasts in each of the 12 western states. These impact estimates are revised to include analyses presented in the Abt/West and Office of Economic Adjustment (OEA) reports.

#### **Civilian Labor Force (2.1.4.2)**

Table 2.1.4.2-1 presents 1980 civilian labor force (CLF) and unemployment estimates for the 12 western states and the nation. It indicates the significance of this region as a source of labor for the U.S.; almost 45 percent (26 million persons) of the nation's civilian labor force of 60.2 million persons was located in these 12 states. About one-half of the regional total and one-fifth of the U.S. figure was supplied by California, with a civilian labor force of 11.2 million persons. Texas was a distant second in terms of CLF size, while Wyoming, with a CLF of 232,000, was smallest. Nevada, New Mexico, and Utah each had a relatively small CLF, ranging from Nevada's 376,000 CLF to a civilian labor force of 607,000 persons in Utah in 1980.

Relative to the nation as a whole, the 12-state region has a low unemployment rate, 6.4 percent as compared to 6.9 percent for the U.S. in 1980. Wyoming, with a 1980 unemployment rate of 3.9 percent was lowest, while Oregon's 8.2 percent was largest. California has the largest unemployed labor pool, 760,000 persons, and Texas, roughly one-half that. Other states in the region have substantially fewer unemployed. Nevada and Utah combined, had 61,000 unemployed persons, while New Mexico had 40,000. The unemployed labor pool across the region as a whole,

Table 2.1.4.2-1. Selected employment data, western states, 1980.

State	Civilian Labor Force	Employment <sup>1</sup>	Unemployment	
			Number	Percent
Arizona	1,126.0	1,003.3	75.0	6.7
California	11,203.0	9,837.6	760.0	6.8
Colorado	1,474.0	1,251.1	82.0	5.6
Idaho	424.0	331.5	33.0	7.9
Montana	374.0	280.6	22.0	6.0
Nevada	376.0	399.6	23.0	6.2
New Mexico	543.0	462.3	40.0	7.4
Oregon	1,271.0	1,041.1	105.0	8.2
Texas	6,412.0	5,861.8	377.0	5.3
Utah	607.0	554.1	38.0	6.2
Washington	1,908.0	1,606.5	143.0	7.5
Wyoming	232.0	205.6	9.0	3.9
Total Western States	25,950.0	22,835.1	1,667.0	6.4
United States	60,145.0	55,988.0	4,157.0	6.9

T5860/10-2-81/a

<sup>1</sup>These employment data are average yearly figures by place of residence.

Source: U.S. Department of Labor, 1981.

1.7 million persons, would likely be sufficient to supply many direct project jobs and many others created in secondary supply industries.

#### **Sectoral Employment (2.1.4.3)**

The 12-state western region has been an important contributor to national employment. Table 2.1.4.3-1 presents total employment by major industry for these states and the U.S. as a whole for 1979. It indicates that these states were the source of one-fourth of the nation's employment in that year. California led all states in aggregate size, with an employment figure of 11.4 million persons. Texas had roughly half this number, while the remaining states were substantially smaller in size. In particular, Idaho, Montana, Nevada, and Wyoming had relatively small total employment figures. Compared to the U.S. as a whole, the mining industry was relatively more important in these 12 western states, with a regional share of 40.9 percent of the U.S. total of 956,000 persons employed in mining in 1979. The importance of mining derives mainly from the relatively large number of employees in this sector in Texas; other states had very small mining employment figures. Most other industries had about a 25 percent share of the U.S. total.

The trade sector, comprising wholesale and retail trade industries, was the leading source of employment in most all states. However, in the relatively smaller states (Montana, New Mexico, and Wyoming) government, composed of federal military and civilian workers and state and local government employees, was the leading employment sector. Following trade, government sector employment was the next most important source of employment. The only exception was California, where service industry employment was the second largest employment source after the trade sector. In general, the third largest industrial source of employment was services, followed in most states by manufacturing.

In general, Table 2.1.4.3-1 indicates that the larger, more metropolitan states of California, Texas, Washington, Arizona, Colorado, and Oregon had relatively well-developed economies, where characteristically, trade, services, and manufacturing were the leading employment sectors. In the smaller states, specialization in relatively few sectors is evident. In Nevada, for example, the extreme specialization in the service industry occurs, where employment in that sector is about 38 percent of total industrial employment. In Idaho, heavy dependence on trade sector employment occurs. In Montana and Wyoming, government and trade sector employment dominates. It is likely that rapid employment growth in the smaller-sized states would necessitate importation of many goods and labor in-migration in the short run to meet increased demand, while over the long term, industrial expansion in the basic sectors, e.g., manufacturing, transportation, trade, and services, would be expected. Conversely, the very large states of California and Texas would have little trouble accommodating industrial growth, hence, requiring little importation of goods and services from outside these states.

#### **Employment Growth Trends (2.1.4.4)**

Employment forecasts indicate relatively rapid growth in the western region through 1990. Table 2.1.4.4-1 presents historic and projected employment figures for the 12-state region and the U.S. as a whole. Total employment in these states is projected to increase by about 9.5 million persons over the 1979-1990 period.



Table 2-1.4, 3-1. Total employment by major industry, western states region, 1979.

State	Total	Farming <sup>1</sup>	Mining	Construction	Manufacturing	Transportation	Trade	Finance, Insurance and Real Estate	Services	Government
Arizona	1,137,882	19,581	21,642	86,628	144,338	48,713	235,811	57,506	212,425	227,985
California	11,357,109	288,250	39,301	466,679	2,013,524	540,363	2,243,902	611,589	2,239,045	2,028,002
Colorado	1,441,112	43,021	30,616	79,289	181,184	74,437	299,047	76,131	255,406	284,423
Idaho	433,952	45,825	4,295	19,158	58,268	20,260	83,476	15,647	62,614	82,946
Montana	365,927	33,222	7,733	15,613	26,847	22,515	73,619	13,079	60,756	76,785
Nevada	426,730	4,137	4,648	27,715	19,440	23,115	77,432	17,616	161,993	67,939
New Mexico	547,329	22,690	26,874	35,590	34,792	27,921	104,162	21,284	96,507	140,211
Oregon	1,233,862	59,662	2,357	53,048	278,039	60,158	256,611	58,239	197,389	208,375
Texas	6,624,715	274,343	200,511	418,040	1,017,628	349,228	1,374,694	310,797	1,069,964	1,086,460
Utah	613,614	18,622	17,730	35,208	86,868	33,134	128,548	26,653	91,866	136,760
Washington	1,893,090	81,971	3,199	106,288	311,131	88,895	380,447	91,051	322,846	365,078
Wyoming	242,038	13,959	32,502	20,914	10,049	15,729	44,143	7,294	31,444	46,600
Total Western States	26,317,360	905,283	391,408	1,364,170	4,132,108	1,304,468	5,301,892	1,306,886	4,802,255	4,749,571
United States	105,452,000	4,039,000	956,000	4,545,000	21,076,000	5,134,000	20,313,000	5,021,000	18,828,000	18,144,000
Region as a Percent of U.S.	25.0	22.4	40.9	30.0	19.6	25.4	26.1	26.0	25.5	26.2

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<sup>1</sup> Includes farm proprietors plus wage and salary employment in the farm sector.

Source: U. S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1981.

Table 2.1.4.4-1. Total historic and projected employment, western states region.

Employment/ State	Historic			Projections <sup>1</sup>		Average Annual Growth Rate <sup>2</sup>			
	1970	1979	1980	1985	1990	1970-1979	1980-1985	1985-1990	
Arizona	706,235	1,137,882	1,185,332	1,453,963	1,778,343	5.4	4.17	4.11	
California	8,469,712	11,357,109	11,602,423	12,910,798	14,578,903	3.3	2.16	2.46	
Colorado	964,953	1,441,112	1,476,563	1,667,339	2,023,701	4.6	2.46	3.95	
Idaho	305,358	433,952	450,529	543,410	651,033	4.0	3.82	3.68	
Montana	284,991	426,730	448,408	547,658	676,300	6.4	4.08	4.31	
New Mexico	377,352	547,329	565,117	663,115	783,018	4.2	3.25	3.38	
Oregon	875,584	1,233,862	1,277,294	1,518,491	1,763,768	3.9	3.52	3.04	
Texas	4,770,013	6,624,715	6,862,542	8,186,046	9,293,429	3.7	3.59	2.57	
Utah	423,469	613,614	634,538	750,361	883,899	4.2	3.41	3.33	
Washington	1,402,922	1,893,090	1,934,549	2,155,866	2,505,311	3.4	2.19	3.05	
Wyoming	150,357	242,038	251,695	306,079	363,350	5.4	3.99	3.49	
Total Western States	18,974,137	26,317,360	27,064,723	31,131,980	35,785,555	3.7	2.8	2.8	
United States	86,799,668	105,452,000	107,455,588	118,059,224	129,709,219	2.2	1.9	1.9	
Region as Percent of United States T-5861/9-25-81	21.9	25.0	25.2	26.4	27.6				

<sup>1</sup>Projections have been calculated from Chase Econometrics average annual growth rates applied to 1979 BEA employment figures.  
<sup>2</sup>The 1970-1979 growth rates are historic figures, while remaining growth rates were obtained from Chase Econometrics' forecasts.

Source: Bureau of Economic Analysis, Regional Economic Information System, 1981, and Chase Econometrics, "Long-Term Regional forecasts - State and Metropolitan Areas," Volume 1, First Quarter 1981.

Employment in 1990 would equal 35.8 million persons, a figure which is about 28 percent of the U.S. total in that year. Table 2.1.4.4-1 indicates that without exception, growth is expected to moderate across the 12 states over the forecast period as compared to historic rates. For example, California's average annual growth rate equalled 3.3 percent over the 1970-1979 period, while between 1980 and 1985, average annual growth is expected to equal about 2.2 percent, then increase to 2.5 percent annually over the the 1985-1990 period. For the region as a whole, annual growth is expected to average 2.8 percent over the 1980-1990 forecast period, a decline from 3.7 percent per year over 1970-1979. Compared to the U.S. as a whole, however, western states are expected to grow relatively quickly. Table 2.1.4.4-1 indicates that the U.S. annual growth is expected to average 1.9 percent annually over the 1980-1990 period.

Historically, Nevada has led the 12 states in employment growth, averaging 6.4 percent per year over 1970-1979. Montana, on the other hand, has had least growth, averaging 2.8 percent per year over 1970-1979. Except for Montana, though, relatively smaller-sized states have historically experienced relatively more rapid growth as compared to the larger states. California, Texas, and Washington, the three states with the largest employment figures, have historically observed relatively less employment growth than states such as Arizona, Colorado, Idaho, New Mexico, or Wyoming. These basic differences in employment trends are forecast to continue through 1990, with smaller states growing relatively more rapidly than larger ones.

Table 2.1.4.4-2 presents additional detail on historic employment growth by major industrial sector for Nevada, New Mexico, Texas, Utah, and the United States as a whole. In New Mexico, Texas, and Utah, construction industry employment has grown most rapidly over the 1970-1979 period. In Utah, average annual growth in this sector equalled 9.9 percent. In Nevada, however, the manufacturing sector experienced the largest employment growth averaging 9.7 percent per year over 1970-1979, as compared to the state's 9.2 percent annual growth in construction over the same period. In Nevada, other rapid growth sectors have included wholesale and retail trade; the finance, insurance, and real estate industry; and services employment. All of these sectors had average growth rates above 7 percent per year. Average annual growth rates of this magnitude indicate very rapid real growth in employment. Table 2.1.4.4-2 indicates that in Nevada, construction, manufacturing, trade, finance, insurance, and real estate, and services roughly doubled in size in the 9-year period. New Mexico industry has not grown so quickly, but trade, finance, insurance and real estate, and manufacturing industries have all posted rapid growth over the 1970-1979 period. Texas has exhibited the lowest growth rates of the four states, but its mining, trade, and finance, insurance, and real estate industries have grown much more rapidly than the U.S. as a whole. Furthermore, although the growth rates in Texas have been relatively less, absolute employment increase has been much larger than in the other three states presented in Table 2.1.4.4-2. Utah has shown rapid growth in finance, insurance, and real estate, services, and manufacturing, in that order, where average annual growth has been at least 5 percent per year over 1970-1979. In all four states, growth in almost all industries has been greater than that observed for the U.S. as a whole. The exception has been the farm sector, where employment losses have been posted in Nevada, Texas, and Utah, and these negative growth rates have exceeded those for the nation.

Table 2.1.4.2. Total employment by major industry, selected western states, 1970 and 1979.

State	Total	Farming <sup>1</sup>	Mining	Construction	Manufacturing	Transportation	Trade	Finance, Insurance and Real Estate	Services	Government
<b>Nevada</b>										
1970	243,191	4,619	4,052	12,501	8,444	13,630	39,506	8,518	87,193	50,671
1979	426,730	4,137	4,648	27,715	19,440	23,115	77,432	17,616	161,993	67,939
Average Annual Growth (Percent)	6.4	1.2	1.5	9.2	9.7	6.0	7.8	8.4	7.1	3.3
<b>New Mexico</b>										
1970	377,352	21,732	16,923	16,954	21,065	20,198	62,996	13,100	64,087	113,326
1979	547,329	22,690	26,874	35,590	34,792	27,921	104,162	21,284	96,507	140,211
Average Annual Growth (Percent)	4.2	0.5	5.3	8.6	5.7	3.7	5.8	5.5	4.7	2.4
<b>Texas</b>										
1970	4,770,013	324,778	103,799	233,888	743,518	255,137	899,411	194,857	756,795	897,386
1979	6,624,715	274,343	200,511	418,040	1,017,628	349,228	1,374,694	310,797	1,069,964	1,086,469
Average Annual Growth (Percent)	3.7	-1.9	7.6	6.7	3.5	3.5	4.8	5.3	3.9	2.1
<b>Utah</b>										
1970	423,469	21,668	12,732	15,003	54,992	23,391	81,353	15,901	55,183	115,888
1979	613,614	18,622	17,730	35,208	86,868	33,134	128,548	26,653	91,866	134,760
Average Annual Growth (Percent)	4.2	-1.7	3.7	9.9	5.2	3.9	5.2	5.9	5.8	1.7
<b>United States</b>										
1970	86,799,668	4,414,668	627,000	3,557,000	19,410,000	4,510,000	15,266,000	3,713,000	13,490,000	16,104,000
1979	105,452,000	4,034,000	956,000	4,545,000	21,076,000	5,134,000	20,313,000	5,021,000	18,828,000	18,144,000
Average Annual Growth (Percent)	2.2	-0.9	4.8	2.8	0.9	1.5	3.2	3.4	3.8	1.3

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<sup>1</sup> Includes farm proprietors plus wage and salary employment in the farm sector.

Source: U. S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1981.

Baseline projections of employment in the 12-state region are highly dependent on energy development and mineral extraction. In recent years, high oil prices have encouraged the search for substitute fuels and technologies. In many parts of the region, power plants using coal, and to a lesser extent, geothermal steam, are projected as important energy-production activities. The development of synthetic fuels, the mining of large coal deposits, tar sands, and oil shale, and the development of strategic minerals such as uranium, could all represent important employment activities in the region.

The assessment of cumulative effects of energy and mineral developments as well as other activities in the region, such as the M-X project, led to the formation of the Western Governors' Policy Office (WESTPO). This organization published a report, prepared by Abt/West, on future energy development. This study, "Energy Activity in the West: Manpower Issues," identifies and analyzes production and employment data on oil, natural gas, coal, uranium and synthetic fuels development.

The WESTPO region includes 11 states, and there is some overlap with the 12 western-state region of this study including the states of Arizona, Colorado, Montana, New Mexico, Nevada, Utah, and Wyoming.

Table 2.1.4.4-3 presents direct employment estimates for 1979, 1985, and 1990 for oil and natural gas, coal mining, coal-fired power plants, and non-energy mineral mining and processing for the WESTPO region as a whole. It also details employment forecasts for those seven states also in the western states region.

The West holds about 34 percent of the nation's total proven reserves of oil and 27 percent of its proven natural gas reserves (Abt/West, 1981). Table 2.1.4.4-3 indicates direct employment in oil and natural gas of 89,800 persons in 1979. The seven states listed in the table comprise only about 40 percent of this figure, with most employment there concentrated in New Mexico and Wyoming. The overwhelming majority of oil and natural gas employment has occurred in Alaska. Future projections of employment in the WESTPO region are uncertain, and intensive exploration programs are in process in the overthrust belt and the Williston Basin areas. If large oil finds are made, employment projections, particularly in Wyoming, could increase substantially. The future scenario for natural gas is very similar, with New Mexico and Wyoming the leading employment sources in states both in the western states region and the WESTPO region. Over the next ten years, Table 2.1.4.4-3 indicates, as employment in oil and natural gas will remain roughly constant, except in New Mexico where it will decline by roughly 6,000 employees and in Wyoming where it is projected to increase by about 3,000 persons.

The WESTPO study indicates that the West comprises about 48 percent of the nation's total coal reserves. Western coal has a low sulfur content, making it more environmentally acceptable, hence, in greater demand. Table 2.1.4.4-3 indicates that virtually all coal mining employment is included in those 7 states within the WESTPO region and the western states region. It is important to note the very rapid projected acceleration of employment in coal mining, where over the 11-year forecast period, total employment in the WESTPO region is forecast to triple to 54,000 persons by 1990. Growth of coal production in particular states has been spectacular between 1970 and 1979: the WESTPO report cites increases of 894 percent for Wyoming, 852 percent for Montana, 161 percent for Utah, 138 percent for Colorado, 113 percent for Arizona, and 111 percent for New Mexico over this

Table 2.1.4.4. 3. Direct employment estimates.

Region	Oil and Natural Gas				Coal Mining			Coal-Fired Power Plants			Non-Energy Mineral Mining and Processing 1979	
	1979	1985	1990	1979	1985	1990	1979	1985	1990		Metal	Non-Metal
Westpo Region	89,800	97,000	94,700	18,500	37,000	54,000	18,080	15,660	7,620		98,300	45,200
Arizona	100	100	100	1,000	1,000	1,000	1,705	1,805	965		27,200	7,380
Colorado	3,600	3,700	3,900	4,345	8,000	12,000	5,460	2,990	1,740		14,880	10,260
Montana	2,800	3,300	3,400	1,195	2,300	2,850	1,360	380	380		8,910	2,225
New Mexico	13,300	9,800	7,300	1,870	7,945	11,330	990	685	350		10,980	5,970
Nevada	100	100	100	--	--	--	1,420	2,040	730		2,620	3,970
Utah	2,600	2,600	2,600	4,600	6,055	13,000	1,690	4,465	1,105		15,480	5,070
Wyoming	12,900	16,000	15,600	4,495	9,500	11,280	1,930	1,785	1,050		5,655	4,740
7 States Share of Westpo Total (Percent)	39.4	36.7	34.8	94.6	94.1	95.3	80.5	90.4	82.9		87.2	87.6
	35,400	35,600	33,000	17,505	34,800	51,460	14,555	14,150	6,320		85,725	39,615

T5863/10-2-81/a

Source: Abt/West, 1981. Study prepared for the Western Governor's Policy Office (WESTPO).

nine-year period. In all states listed in Table 2.1.4.4-3, except Nevada and Arizona, very large employment growth is forecast. This however, is dependent upon significant demand growth for coal reserves as energy sources.

With such a large abundance of relatively accessible coal reserves, coal fired power plants could be an increasingly important supply for local and regional energy demand. For the region as a whole, about 18,000 persons were employed in the construction and operation of coal-fired power plants in 1979. Projections indicate that in subsequent years, employment will decrease by almost 60 percent by 1990, to an employment level of 7,600 persons. Of the seven states listed in Table 2.1.4.4-3, power plant employment in Colorado would be most significant, followed by Utah, Wyoming, and to a lesser extent, Nevada.

The WESTPO report indicates that about 21,000 persons were employed in uranium mining and milling in the region. It also suggests that direct employment in this set of industries could be as much as 25,000 in 1986 and 30,000, by 1990. However, the uncertainty of the nuclear industry makes projections of employment highly variable. If uranium is again in high demand, the states of New Mexico, Wyoming, Colorado, and Utah would experience sizeable direct employment growth. New Mexico and Wyoming alone comprise 86 percent of total U.S. proven reserves; with the addition of reserves in Colorado and Utah, the WESTPO share of the nation's total increases to almost 93 percent.

The synthetic fuels industry could be an important contributor of employment growth in the region if demand for synfuels were to increase significantly. Currently, however, this appears unlikely. Future development could include oil shale, tar sands, coal liquification and gasification projects, and even ethanol plants. The WESTPO report indicates that if projected synfuels plants were developed to design capacity, direct employment would increase to 68,000 persons, with most employment in coal liquification and oil shale. By 1990, the report states that synfuels' direct employment could be as much as 166,000.

Table 2.1.4.4-3 also presents direct employment estimates for non-energy mineral, mining and processing. These include the mining of copper, molybdenum, lead, zinc, tungsten, and tin. The table indicates that almost 100,000 persons were employed in the metals industry in 1979. There were also about 45,000 persons directly employed in the non-metal minerals industry in that year.

In terms of energy related employment, jobs in synfuels, followed by non-energy minerals, coal, oil and natural gas, and uranium, in that order, would be the largest employment sources in the WESTPO region under baseline assumptions and projections. Taking the energy scenario pictured by the WESTPO report alone, demand growth in regional labor markets could induce manpower shortages, wage escalation, and labor in-migration. These energy projects in the West would induce a large increase in the demand for professional, technical, and managerial personnel. Demand for skilled craftspersons would also increase. These occupations include pipefitters, welders, electricians, operating engineers, carpenters, and ironworkers. Of these skilled trades, the WESTPO report identifies future competition for ironworkers as the most serious.

Analyses of energy futures in the OEA report (Mountain West Research, 1981) reach similar conclusions, although under their growth scenario, relatively more

stress is forecast for pipefitters, welders and operating engineers followed by carpenters, electricians, and iron workers. The OEA report stresses potential energy-related impacts on the supply of craft labor. Table 2.1.4.4-4, taken from the OEA Report, presents estimates of craft employment in the United States for 1978 and 1986. These projections, made by the U.S. Department of Labor, indicate that annual growth of craft employment is expected to be moderate, only 1.4 percent per year. Growth in the supply of operating engineers, however, is expected to be twice the total craft employment growth, 2.9 percent per year over the 1978-1986 period. The expected growth of carpenters, on the other hand, is expected to be least; annual growth is forecast at only 0.9 percent.

The OEA report supplies information on these same occupations and includes equipment repair and teamsters for the states of Nevada, Utah, Colorado, and California for 1980 and 1986. While outside the OEA study's region of analysis, California was included since it would likely be an important source of labor supply to any of the states of Nevada, Utah, or Colorado. The historic data are based on surveys collected by each of the states for selected industries. Projections are developed by these states' employment security departments, and the OEA reports suggest interpreting them as baseline projection independent of both M-X and energy development. It indicates these projections are basically extrapolations of historic trends. Table 2.1.4.4-5, which presents these seven specific contract construction occupations, indicates that Nevada and Utah would be the smallest suppliers of these occupational trades. California, on the other hand, would be very important. Minimal growth in employment of plumbers, pipefitters and iron workers is forecast in Nevada and Utah over the six-year period. Other occupational classes listed, particularly carpenters, and to a lesser extent, operating engineers, and electricians, are forecast to grow more rapidly in these two states. These forecasts indicate on the whole, that compared to demand growth from future energy development, stress in certain craft occupations could occur if energy demand growth occurs as the report suggests.

## **2.2 INCOME AND EARNINGS**

### **NEVADA/UTAH REGION OF INFLUENCE (2.2.1)**

This section presents baseline income and earnings data for the affected counties in the Nevada/Utah Region of Influence (ROI). Total personal income by place of residence, personal income per capita, labor and proprietor income by place of work and by major industry sector, total wage and salary disbursements, and selected earnings per worker data are provided. The principal data source is the Regional Economic Information System (REIS) of the U.S. Department of Commerce (1981). Information is supplied through 1979 and follows the accounting conventions used in preparing the regional income accounts for the United States as a whole. Detailed supporting tables presenting these data for all the counties in the Nevada/Utah ROI can be found in ETRs 2A-2L.

Income accruing to residents of an area can come from several sources: wage and salary disbursements, other labor income, proprietor income, dividends, interest, rental income, and transfer payments. Wages and salaries are generally the principal source of income. When combined with proprietor income and other labor income, such income is termed "total labor and proprietor income by place of work," or total earnings. Nationwide these income sources represent approximately three-



Table 2.1.4.4-4. Employment by major craft contract construction,  
United States, 1978 and 1986.

Occupation	1978	1986	Projected Annual Growth Rate (percent)
Plumbers/pipefitters	428,000	483,000	1.5
Ironworkers	78,000	94,000	2.4
Electricians	290,000	329,000	1.6
Carpenters	1,253,000	1,342,000	0.9
Operating engineers	581,000	731,000	2.9
Other	2,055,000	2,269,000	1.2
Total	4,685,000	5,248,000	1.4

T5865/10-2-81/a

Source: Mountain West Research, 1981.

Table 2.1.4.4-5. Contract construction employment for selected occupations, Nevada, Utah, Colorado, and California, 1980<sup>1</sup> and 1986.

Occupation <sup>2</sup>	Nevada		Utah		Colorado		California	
	1980	1986	1980	1986	1980	1986	1980	1986
Plumbers/pipefitters	1,560	2,005	1,530	2,455	5,570	8,480	24,210	27,690
Iron workers	235	380	565	895	1,610	2,410	6,520	7,090
Electricians	1,615	2,175	1,285	1,985	5,995	9,095	20,515	22,960
Carpenters	5,075	6,810	6,995	11,450	14,520	20,305	81,920	88,400
Operating engineers	1,295	1,720	1,675	2,660	4,850	7,200	18,135	19,715
Equipment repair	485	620	1,005	1,445	1,400	1,835	9,505	10,335
Teamsters	750	950	230	300	1,890	2,485	8,350	7,305
Other	14,985	N/A	18,630	N/A	43,965	N/A	262,045	N/A
Total	26,000	N/A	31,915	N/A	79,800	N/A	431,200	N/A

T5866/10-2-81/b

<sup>1</sup> 1980 occupational distribution estimated from 1978 data and projected growth 1978-1986.

<sup>2</sup> Plumbers/pipefitters include plumbers, pipelayers, pipefitters, and helpers.

Iron workers include reinforcing-iron workers, structural-steel workers, welders, and flamecutters.

Electricians include electricians and helpers.

Carpenters include carpenters and helpers, lathers, drywall applicators, millwrights, and floor layers.

Operating engineers include crane operators, derrick and hoist operators, and heavy equipment operators.

Equipment repair includes automotive and diesel mechanics, engineering and equipment mechanics, and maintenance mechanics.

Source: Mountain West Research, 1981. It cites the following sources: Nevada Employment Security Department, Occupational Profile of Selected Nonmanufacturing Industries, Carson City, Nevada, September 1979; Utah Department of Employment Security, Occupational Patterns of Selected Nonmanufacturing Industries in Utah 1978, Salt Lake City, Utah, July 1979; Colorado Division of Employment and Training, Report of the Colorado Occupational Employment Statistics, Denver, Colorado, February 1980; State of California Employment Development Department, Occupational Employment in Selected Nonmanufacturing Industries, Sacramento, California, December 1980. For 1986 data, the OEA report utilized Mountain West Research, Inc., 1981 (derived from occupational growth projections supplied by Nevada Employment Security Department, California Employment Development Department, Colorado Division of Employment and Training, and Utah Department of Employment Security).

quarters of the total personal income generated in 1979. The REIS estimates these sources of income on a place of work basis and by major industrial sector. This information, in conjunction with the associated employment tables, provides useful information about the economic structure of an area, the importance of particular industries, historic trends, and the diversity of a region's economic base.

Other significant income sources are transfer payments and property-type income. Transfer payments include social security payments; federal old-age, survivors, disability, and hospital insurance payments; state unemployment insurance payments; government retirement payments; and receipts from other government programs. Property-type income includes dividends, interest, and rental income. Transfer payments and property-type income are added to labor and proprietor income (earnings). The sum is adjusted for payments to social security and for employees working in one jurisdiction but living in another. This results in an estimate of total personal income on a place of residence basis. Total personal income and personal income per capita are both widely-used measures of the economic well-being of a local populations. Personal income per capita estimates should be used with caution, because an unusually high or low rate can be the temporary result of temporary conditions, such as a major energy development, natural disasters, or sharp populations changes. For example, a major construction project may attract a large number of workers with higher-than-average incomes who send a substantial portion of their income to dependents living in other areas. On the other hand, a county with a large institutional population may show an unusually low per capita income which is not necessarily indicative of the well-being of the noninstitutional population.

The following sections present historic earnings and income data for the Nevada/Utah ROI counties. Current dollar estimates are provided in tabular form. Constant dollar estimates are provided where real growth in earnings and/or income are discussed. Unless otherwise referenced, dollar amounts are all current dollar estimates. Constant-dollar estimates were calculated using the implicit price deflator for personal consumption expenditures.

#### **Nevada (2.2.1.1)**

Total earnings in Nevada amounted to approximately \$6 billion in 1979 (Table 2.2.1.1-1). Nevada earnings represented approximately 0.4 percent of the U.S. total during this year, up from about 0.3 percent in 1974. The Nevada economy is dominated by the services industry (principally due to the importance of the state's gaming and tourist industries) which accounted for 37.3 percent of total earnings in the state in 1979. This is more than twice the 1979 national average of 17.1 percent. Total personal income was approximately \$7.4 billion in 1979, more than double its level of \$3.5 billion in 1974. This increase represents an annual average growth rate of 16.2 percent, approximately 50 percent greater than that of the United States as a whole over the same time span. Much of this growth can be attributed to strong gains in the construction sector (20.5 percent annually over the 1974 to 1979 time period).

Income received through transfer payments and other income sources (dividends, interest, and rental income) accounted for 11.3 percent and 13.2 percent of total personal income, respectively, in 1979 compared to the U.S. averages of 13.0 percent and 14.1 percent in the same year.

TABLE 2.2.1.1-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

NEVADA	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS	2590004	2823768	3189424	3731762	4541191	5293443
OTHER LABOR INCOME	116000	146011	174705	218099	268407	324285
PROPRIETORS INCOME	177354	80169	227455	275415	331477	379990
FARM	23069	21924	18347	8098	18860	36523
NON-FARM	154285	158245	209108	267317	312617	343467
FARM	41515	41299	39430	32490	46408	66334
NON-FARM	2842443	3108649	3552154	4192786	5094567	5931384
PRIVATE	2293933	2494715	2875402	3440997	4248141	5002143
AG. SERV.. FOR.. FISH.. AND OTHER	7805	7920	9617	12908	15008	18599
MINING	53359	63086	54175	69077	74032	89785
CONSTRUCTION	241063	217751	284831	393678	552086	613275
MANUFACTURING	137785	153598	173604	217779	274823	330842
NON-DURABLE GOODS	49623	55187	62999	73935	85795	97723
DURABLE GOODS	88162	98411	110605	143844	189028	233119
TRANSPORTATION AND PUBLIC UTILITIES	228478	254655	292488	344185	409445	489551
WHOLESALE TRADE	106981	118180	134639	153468	187946	228723
RETAIL TRADE	330866	361886	421823	477284	579508	701124
FINANCE, INSURANCE, AND REAL ESTATE SERVICES	115905	117391	145899	191665	235577	292893
GOVERNMENT AND GOVERNMENT ENTERPRISES	1071691	1200248	1358326	1580953	1919716	2237351
FEDERAL, CIVILIAN	548510	613934	676752	751789	846526	929241
FEDERAL, MILITARY	121272	136596	152545	164442	179051	190001
STATE AND LOCAL	90288	95569	107844	113341	119466	124530
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	336950	381769	416363	474006	548009	614710
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	2883958	3149948	3591584	4225276	5141075	5997718
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	150016	160802	169292	192837	229166	266501
PLUS: RESIDENCE ADJUSTMENT	2733942	2989146	3422292	4032439	4911909	5731217
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	-69240	-73068	-83986	-102109	-145424	-168888
PLUS: DIVIDENDS, INTEREST, AND RENT	2664702	2916078	3338306	3930330	4766485	5562329
PLUS: TRANSFER PAYMENTS	447487	501128	581235	692932	834901	972443
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	368559	499624	563647	645566	731399	832592
PER CAPITA PERSONAL INCOME (\$)	3480748	3916830	4483188	5268828	6332785	7367364
TOTAL POPULATION (HUNDREDS)	6065	6636	7318	8272	9506	10500
	573869	590266	612596	636964	666219	701671

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Personal income per capita for selected counties in the DDA are presented in Table 2.2.1.1-2. Clark County establishes the general trend for the state with 1979 per capita income of \$10,266 compared to the state level of \$10,201. These levels are significantly higher than the U.S. average of \$8,757. With the exception of White Pine County, 1979 per capita income in the rural counties compared favorably to the U.S. average. However, these rates have only recently been comparable to the U.S. average. Pre-1978 rates for all the rural Nevada counties in the ROI were lower than both state and U.S. averages indicating relatively low-income and less-developed economies. The relatively high 1979 rates in Eureka and Nye counties, however, must be viewed with caution, since they over-state income per capita in comparison to historical trends. These areas have relatively small and undiversified economic bases. Mining and grazing activities dominate their economies (though the services sector is quite strong in Nye County), and year-to-year fluctuations may be substantial.

Per capita income is used to estimate the average relative well-being of residents within a county. Earnings-per-worker statistics are used to measure average wages in a county. Industry-specific earnings-per-worker data would be revealing but are not readily available. Industry-specific REIS earnings data also include proprietor and other labor income, and would consistently overstate real earnings per worker in any given sector. This would be particularly important in sectors where proprietary income is dominant. Table 2.2.1.1-3 provides selected wage and salary earnings-per-worker data for ROI counties in Nevada, the state, and the United States. As with per capita income rates, wage and salary earnings-per-worker rates in Nevada were higher, \$13,111 per worker, than the U.S. average of \$12,884 per worker in 1979. Rates in most counties closely follow the state average. A notable exception is the per-worker rate in Nye County--\$18,000 per worker, or about one-third higher than the state average. This rate is primarily due to salaries in the county's service sector--principally technical and professional workers at the Nellis and NRC installations. Sector-specific wage and salary rates per worker are not available from REIS data due to the inclusion of proprietary and other income sources in the sector-specific data. An estimate of earnings per worker labor and proprietor income is \$22,560 in Nye County as compared to the state average of \$13,811 (see ETRs 2A and 2I).

While wage and salary earnings-per-worker rates showed steady growth during 1974-1979 in all the counties very little real growth occurred after adjustment for inflation. Using the implicit price deflator for personal consumption expenditures, total state per-worker rates reveal no growth over 1974 to 1979, while individual county rates varied less than 10 percent over the same period. The use of other indexes, however, alters this result. The rise in the Consumer Price Index, and in the implicit price deflator for gross national product, have been slightly higher than the personal consumption expenditure index and use of either of these indexes would show actual declines in real earnings per worker--up to 5 percent in the state as a whole.

In summary, while the earnings and income data indicate a relatively strong economy for Nevada much of this strength is from Clark County. In the more rural areas, income levels are generally low and the undiversified economic bases are subject to fluctuations in key industries, mostly mining and agriculture (livestock grazing). While the Clark County economy, with its heavy dependence on the

Table 2.2.1.1-2. Personal income per capita, selected Nevada counties, state of Nevada, and United States, 1969-1979 (current dollars).

County	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Clark	4,247	4,591	4,774	5,108	5,594	5,979	6,545	7,176	8,083	9,208	10,266
Eureka	4,746	4,065	4,096	4,630	4,105	3,805	4,180	5,287	6,683	7,640	9,845
Lincoln	2,731	2,879	3,312	3,742	3,953	4,048	4,511	4,589	5,124	6,119	7,619
Nye	3,994	3,911	4,524	4,719	4,576	3,559	5,071	5,413	6,218	8,560	9,566
White Pine	3,314	3,700	3,896	4,310	4,769	5,072	5,353	5,174	6,402	7,109	7,032
Nevada	4,249	4,625	4,853	5,251	5,720	6,064	6,635	7,317	8,272	9,343	10,201
United States	3,667	3,893	4,132	4,493	4,981	5,428	5,861	6,401	7,035	7,846	8,757

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Sources: For aggregate personal income, U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April 1981; and for population, Nevada State Planning Coordinators Office, 1981.

Table 2.2.1.1-3. Wage and salary earnings per worker, selected counties, State of Nevada, and United States, 1974-1979 (current dollars).

County	1974	1975	1976	1977	1978	1979
Clark	9,734	10,318	10,935	11,583	12,538	13,361
Eureka	9,257	10,127	10,852	11,763	13,004	14,907
Lincoln	8,589	9,243	9,470	10,340	11,860	13,097
Nye	13,853	14,989	15,390	16,136	17,764	17,994
White Pine	9,176	9,823	10,133	10,704	11,340	11,827
Nevada	9,386	9,978	10,594	11,280	12,192	13,111
United States	8,909	9,572	10,283	10,986	11,855	12,884

T5106/9-2-81

Source: U.S. Department of Commerce Bureau of Economic Analysis, Regional Economic Information System, April 1981.

gaming and tourist industries, also is subject to shifting consumption patterns, its economic base is more substantial than those of the other Nevada ROI counties.

Aggregate personal income for the state of Nevada is projected to increase in real terms at an average annual rate of 3.2 percent from 1980 to 1985, and by 3.9 percent yearly from 1985 to 1990 (Chase Econometric Associates, 1981a). By comparison, U.S. personal income is projected by Chase to grow at only two-thirds this rate, 2.4 percent annually during 1980 to 1985 and 2.6 percent annually during 1985-1990.

#### Utah (2.2.1.2)

Total earnings in Utah were approximately \$8 billion in 1979 (Table 2.2.1.2-1). Utah earnings represented approximately 0.5 percent of the U.S. total, up slightly since 1974. Much of this increase can be attributed to above-average gains in the mining, construction, and manufacturing sectors. These increases are felt principally in the east and the metropolitan areas of the state. No one particular industry dominates the state's economy though mining activities--at 5.6 percent of total earnings in 1979--accounted for a significantly larger share of earnings than the nationwide average of 1.7 percent. Most of these earnings, were from mining activities in eastern Utah. Earnings in government also contributed a larger share in 1979 than the national average--20.5 percent versus 16.0 percent for the United States. Farm earnings are particularly volatile primarily due to fluctuations in proprietary income. Earnings from this source differ greatly from year to year.

Personal income per capita for selected Utah counties and the state of Utah are presented in Table 2.2.1.2-2. Per capita incomes for all the counties, as well as the state, were substantially lower in 1979 than the U.S. average. Per capita incomes ranged from \$5,111 in Juab County in 1979 to \$8,275 in Salt Lake County. Salt Lake and Utah counties enjoy relatively higher per capita incomes principally due to their diversified economic bases. Growth in per capita incomes in the counties other than Salt Lake and Utah have a large effect on state totals, accounting for approximately 60 percent of total earnings in the state in 1979.

Table 2.2.1.2-3 presents wage and salary earnings per worker for the ROI counties, the state of Utah, and the United States. Earnings per worker in the Tier I Siting Area counties fall below the state and U.S. averages with the exception of Salt Lake County and Tooele County.

Unlike Nevada, Utah has posted modest gains when the effects of inflation are taken into consideration. Using the implicit price deflator for personal consumption expenditures, constant dollar wage and salary earnings per worker have risen from \$11,131 in 1974 to \$11,951 by 1979, an average real gain of 1.4 percent annually. This statewide increase also is reflected in real earnings-per-worker gains in the ROI counties. Using alternative indexes these gains would be somewhat smaller.

In Utah projections by Chase Econometrics (1981a) indicate average annual growth of 3.2 percent in real aggregate personal income from 1980 to 1985, and 3.4 percent from 1985 to 1990. By comparison, Chase's projections of U.S. personal income growth are significantly less, 2.4 percent during 1980-1985 and 2.6 percent from 1985-1990.



TABLE 2.1.2-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

UTAH		1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		3628277	3971683	4500552	5130272	5897910	6713749
OTHER LABOR INCOME		247740	308609	372983	442997	525567	620148
PROPRIETORS INCOME		370257	354651	421405	486947	607495	639576
FARM		72847	47655	62148	42733	78061	59555
NON-FARM		297410	306996	359257	444214	529434	580021
FARM		94567	72937	87112	70550	108528	91501
NON-FARM		4151707	4562006	5207828	5989666	6922444	7881972
PRIVATE		3130909	3445258	3975947	4615444	5405606	6250996
AG SERV., FOR., FISH, AND OTHER		8470	8819	9758	11580	13959	15550
MINING		191257	218902	261484	303342	360341	443312
CONSTRUCTION		323809	348058	419791	543440	614150	683337
MANUFACTURING		719904	779848	881919	1011985	1182205	1407136
NON-DURABLE GOODS		204123	227640	257467	291726	330935	372948
DURABLE GOODS		515781	552208	624452	720259	851270	1034188
TRANSPORTATION AND PUBLIC UTILITIES		359867	395270	456358	518554	607624	707748
WHOLESALE TRADE		292769	325341	363723	407112	480921	560664
RETAIL TRADE		470530	509474	579778	646613	750446	840320
FINANCE, INSURANCE, AND REAL ESTATE		578363	660027	734779	881512	1043165	1193731
SERVICES		1020798	1116748	1231881	1374222	1516238	1630976
GOVERNMENT AND GOVERNMENT ENTERPRISES		460808	483851	524714	552307	590091	615598
FEDERAL, CIVILIAN		60783	59913	68485	74703	81966	94714
FEDERAL, MILITARY		499207	572984	638682	747212	844781	920664
STATE AND LOCAL		4246274	4634943	5294940	6060216	7030972	7973473
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		235084	260153	306280	351696	407941	471723
LESS PER'S CONTRIB FOR SOC. INSURANCE BY P. OF WK		401190	4374790	4988660	5708520	6623028	7501750
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		2148	2529	2173	2132	3307	4070
PLUS RESIDENCE ADJUSTMENT		4013338	4377319	4990833	5710652	6626335	7505820
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		638485	752345	794646	914873	1013465	1163202
PLUS DIVIDENDS, INTEREST, AND RENT		609940	766931	841405	925625	1026220	1149905
PLUS TRANSFER PAYMENTS		5261763	5896595	6626884	7551150	8666020	9818927
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		4465	4903	5379	5946	6581	7182
PER CAPITA PERSONAL INCOME (\$)		1178575	1202675	1232043	1270006	1316742	1367094
TOTAL POPULATION (HUNDREDS)							

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.2.1.2-2. Personal income per capita, selected Utah counties, State of Utah, and United States, 1969-1979  
(current dollars).

County	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Reaver	2,300	2,571	3,006	3,098	3,476	3,735	3,868	4,439	4,683	5,287	5,563
Iron	2,591	2,614	2,912	3,178	3,477	3,668	3,906	4,210	4,445	5,004	5,358
Juab	2,188	2,314	2,525	2,776	2,983	3,073	3,227	3,492	3,702	4,370	5,111
Millard	2,511	2,547	2,921	3,101	3,628	3,717	3,873	4,109	4,162	4,960	5,088
Salt Lake	3,227	3,555	3,827	4,189	4,626	5,057	5,577	6,014	6,850	7,633	8,275
Utah	2,333	2,498	2,662	2,940	3,328	3,640	3,921	4,355	4,908	5,278	5,805
Washington	2,115	2,400	2,510	2,691	3,169	3,381	3,802	4,149	4,607	5,123	5,506
State of Utah	3,088	3,168	3,422	3,710	4,096	4,463	4,902	5,379	5,946	6,580	7,183
United States	3,667	3,893	4,132	4,493	4,981	5,428	5,861	6,401	7,035	7,846	8,757

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Sources: For aggregate personal income, U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April 1981; and for population, Utah State Population Work Committee.

Table 2.2.1.2-3. Wage and salary earnings per worker, selected Utah counties, State of Utah, and United States, 1974-1979 (current dollars).

County	1974	1975	1976	1977	1978	1979
Beaver	6,158	6,415	6,862	7,485	8,131	9,540
Iron	6,203	6,609	7,234	8,100	9,016	9,876
Juab	5,908	6,193	6,407	6,623	7,269	9,702
Millard	5,413	5,903	5,898	6,177	6,787	8,231
Salt Lake	8,161	8,825	9,558	10,385	11,286	12,340
Tooele	10,026	10,839	11,889	12,742	13,009	14,061
Utah	7,478	8,258	9,030	9,685	10,422	11,564
Washington	5,790	6,324	6,820	7,414	8,118	9,297
State of Utah	7,976	8,639	9,364	10,104	10,914	11,951
United States	8,909	9,572	10,283	10,986	11,855	12,884

T5108/9-2-81

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April 1981.

## TEXAS/NEW MEXICO REGION OF INFLUENCE (2.2.2)

This section presents baseline income and earnings data for the region of influence (ROI) counties in Texas and New Mexico. State earnings and income county, personal income per capita, and selected earnings per worker are presented. The income and earnings data are from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System (REIS). The data show personal income by major source and total labor and proprietor income by type and industry through 1979. A description of the accounting framework utilized and definitions are found in Section 3.2.3.2 of the FEIS. Detailed supporting tables presenting these data for all the counties in the Texas/New Mexico ROI are included in ETRs 3A-3C.

### Texas (2.2.2.1)

Total earnings in Texas amounted to approximately \$92.4 billion in 1979 (Table 2.2.2.1-1), while aggregate personal income reached \$117.5 billion in that year. Therefore, Texas accounts for 6.2 percent of total U.S. earnings (up from 5.2 percent in 1974) and 6.1 percent of total U.S. personal income. While no one sector dominates the Texas economy, earnings originating in the manufacturing sector account for the single largest source, about 19.9 percent of total labor and proprietor income in 1979. Service sector and government sector earnings are the next in importance although they both contribute less on a percentage basis than the average shares found at the national level. With the extensive energy production in Texas, earnings from the mining sector contribute a much larger percentage share to total state earnings than the percentage found at the national level--5.7 percent in Texas and 1.7 percent at the national level.

The Tier 1 Siting Area, however, comprises a very small portion of the Texas economy. Only 3.8 percent of the total personal income received in the state was received by Tier 1 Siting Area counties in 1979. In addition, while steady growth in personal income per capita is evident in the state as a whole, the majority of the ROI counties have experienced large variations in their per capita incomes (Table 2.2.2.1-2). Potter, Randall, and Lubbock counties are the only counties in the Tier 1 Siting Area which have experienced steady growth in income per capita, principally due to the stabilizing effect the relatively large metropolitan areas of Amarillo and Lubbock have on total county income levels. In the remaining counties the wide year-to-year variances are attributable to fluctuating farm proprietor income, particularly during the mid-1970s. Manufacturing and trade earnings also were subject to significant variation, though to a lesser extent.

Table 2.2.2.1-3 presents wage and salary earnings per worker for the ROI counties, the state of Texas, and the United States. Unlike per capita income levels, these rates show continued growth during the years 1974 through 1979 principally due to the exclusion of the fluctuating farm proprietor income. Through 1979, wage and salary earnings per worker in the ROI counties were substantially below the state and national levels. In the counties where the metropolitan areas of Lubbock and Amarillo are located, wage and salary earnings per worker approach state average levels. After adjustment for inflation, however, only negligible gains are evident over time. At the state level, the average annual rate of increase over the five-year period was 9.3 percent.

TABLE 2.2.2.1-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

TEXAS		1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		39150982	43633509	49920725	56422974	65572401	76013820
OTHER LABOR INCOME		3088418	3785244	4560969	5470760	649595	7676363
PROPRIETORS INCOME		4942215	5222765	5690176	6733261	7264134	8668600
FARM		861711	991756	843044	1092718	1031535	1784003
NON-FARM		4080504	4231009	4847132	5640543	6232599	6884597
FARM		1146167	1263301	1167537	1490930	1444796	2262002
NON-FARM		46035448	51378217	59004333	77891334	90096781	90096781
PRIVATE		37630314	42073972	48585789	55860836	65545753	76615253
AG. SERV., FOR. FISH., AND OTHER		168902	194143	227294	270464	351106	425150
MINING		2112102	2368968	3069629	3401945	4336705	5234041
CONSTRUCTION		3560413	4005132	4830166	5624418	6660835	7809464
MANUFACTURING		9385252	10321872	11860361	13591402	15746339	18416571
NON-DURABLE GOODS		4047864	4477134	5223894	5925318	6637029	7467241
DURABLE GOODS		5337388	5844738	6636467	7666084	9109310	10949330
TRANSPORTATION AND PUBLIC UTILITIES		3817584	4170425	4744401	5547058	6429762	7572345
WHOLESALE TRADE		3755865	4343773	4959776	5533361	6490920	7668535
RETAIL TRADE		5312909	5827548	6622816	7481005	8603425	9941513
FINANCE, INSURANCE, AND REAL ESTATE		2457996	2709855	3200029	3936740	4645098	5358260
SERVICES		7059291	8132256	9071317	10474443	12281563	14189374
GOVERNMENT AND GOVERNMENT ENTERPRISES		8405134	9304245	10418544	11275229	12345581	13481528
FEDERAL, CIVILIAN		2091000	2265775	2468871	2671718	2918952	3106755
FEDERAL, MILITARY		1602262	1609072	1674218	1687777	1766679	1831224
STATE AND LOCAL		4711872	5429398	6275455	6915734	7659950	8543549
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		47181615	52641518	60171870	68626995	79336130	92358783
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		2402923	2693929	3010232	3418786	4015470	4656411
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		44778692	49947589	57161638	65208209	75320660	87702372
PLUS: RESIDENCE ADJUSTMENT		-80427	23499	66280	-111501	-177481	-169655
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		44698265	49971088	57227918	65096708	75143179	87532717
PLUS: DIVIDENDS, INTEREST, AND RENT		9407616	10334348	11716558	13716797	15679172	17778851
PLUS: TRANSFER PAYMENTS		6469278	8025148	8851616	9684378	10737197	12142359
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		60575159	68330584	77796092	88497883	101559548	117453927
PER CAPITA PERSONAL INCOME (\$)		5041	5583	6175	6911	7784	8778
TOTAL POPULATION (HUNDREDS)		12017229	12237986	12599047	12805762	13046832	13380270

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.2.2.1-2. Personal income per capita, selected counties, State of Texas, and United States, 1969-1979  
(current dollars).

County	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Bailey	2,872	3,291	2,430	3,264	5,498	4,782	5,156	4,191	6,158	6,579	8,355
Castro	3,636	4,976	4,131	4,061	5,815	4,543	7,139	5,783	6,245	6,052	7,348
Cochran	2,117	3,343	3,149	2,780	2,595	3,428	3,153	2,781	5,302	4,297	6,276
Dallam	4,175	3,407	3,836	3,204	4,820	3,308	5,155	5,272	8,212	7,812	8,267
Deaf Smith	4,448	5,411	4,610	5,105	5,677	4,432	7,635	6,158	8,533	8,436	8,598
Hale	2,581	3,673	3,651	3,691	5,218	4,614	5,204	5,914	6,901	6,490	8,019
Hartley	4,771	1,104	2,347	5,048	7,047	2,384	4,323	3,536	8,607	5,469	3,859
Hockley	2,571	3,052	2,804	2,960	4,314	3,785	4,169	4,635	6,745	5,558	7,285
Lamb	2,697	3,568	3,141	3,207	4,418	4,318	5,507	5,748	7,236	6,536	8,506
Lubbock	2,964	3,355	3,420	3,723	4,324	4,724	5,120	5,762	6,642	7,220	8,143
Moore	3,848	4,448	3,213	3,149	3,723	4,482	5,272	6,245	7,698	7,027	7,453
Oldham	2,845	2,923	1,063	3,222	4,491	1,555	4,658	2,187	3,033	6,853	5,141
Parmer	5,241	6,341	4,864	2,147	6,288	4,623	7,887	5,902	5,526	4,874	5,978
Potter	2,972	3,561	4,046	4,205	4,722	5,552	6,279	6,927	7,786	8,802	9,747
Randall	3,449	4,000	4,955	4,047	4,613	4,867	5,952	6,666	7,189	8,016	8,670
Sherman	5,551	6,000	6,953	2,866	5,979	4,035	7,984	4,825	9,105	6,657	5,980
Swisher	3,800	4,000	4,000	4,203	6,277	4,524	6,460	5,438	7,542	7,297	8,057
Texas	4,000	4,000	4,000	4,053	4,525	5,041	5,583	6,175	6,911	7,784	8,778
United States	3,667	4,000	4,132	4,493	4,981	5,428	5,861	6,401	7,035	7,846	8,757

T5109/9-2-81

Source: U.S. Dept. of Commerce, April 1981.

Table 2.2.2.1-3. Wage and salary earnings per worker, selected counties, State of Texas, and United States, 1974-1979 (current dollars).

County	1974	1975	1976	1977	1978	1979
Bailey	5,401	5,727	6,221	7,023	8,081	9,132
Castro	5,189	5,589	6,306	6,825	7,737	8,247
Cochran	5,113	5,467	5,801	6,523	6,642	7,909
Dallam	5,836	6,242	7,050	7,966	8,687	9,751
Deaf Smith	6,150	6,858	7,435	7,999	8,893	9,568
Hale	6,345	6,757	7,310	7,865	8,501	9,369
Hartley	5,031	5,006	5,490	6,356	6,815	7,895
Hockley	7,041	7,675	8,392	9,280	10,317	11,203
Lamb	5,133	5,687	6,477	6,866	7,638	8,617
Lubbock	7,360	7,917	8,560	9,008	9,800	11,122
Moore	7,584	8,273	9,532	10,146	11,307	12,593
Oldham	5,523	6,224	6,618	7,206	8,008	9,199
Parmer	5,481	5,820	6,363	6,948	7,704	9,036
Potter	7,881	8,733	9,531	10,229	11,204	12,400
Randall	6,700	7,636	8,064	8,407	9,481	10,116
Sherman	5,408	5,768	6,339	7,061	7,397	8,233
Swisher	5,340	5,711	6,149	6,593	7,115	8,046
Texas	8,185	8,947	9,751	10,510	11,551	12,771
United States	8,909	9,571	10,283	10,986	11,855	12,884

T5110/9-2-81

Source: U.S. Dept. of Commerce, April 1981.

### **New Mexico (2.2.2.2)**

The New Mexico ROI counties' income levels are heavily dependent on farm proprietor income (Table 2.2.2.2-1). Wage and salary earnings, however, have shown steady growth in the state. Personal income per capital levels in the ROI are substantially below the U.S. average, with the exception of the 1978 and 1979 figures for Union County. The exception was due to expanded construction activity in 1978. The counties of De Baca, Harding, Roosevelt, and Union all experienced significant downturns in per capita income in 1974, but were able to recover some of this loss in the subsequent year, principally due to a rebound in farm earnings.

Wage and salary earnings per worker for the ROI counties are presented in Table 2.2.2.2-3. Wage and salary earnings per worker ranged from \$8,347 in Union County to \$10,675 in Curry County, with a state average of \$11,658. For the ROI counties, and for the state as a whole, earnings per worker fall below the U.S. average.

While the wage and salary earnings per worker rates all show continued growth in the years 1974-1979, when converted to constant dollar terms, only modest gains are exhibited--statewide, an average annual increase of 1.4 percent. Although small, this increase compares favorably to the U.S. average annual increase of 0.7 percent during the five-year period.

Chase Econometrics (1981a) projects statewide growth in aggregate real personal income in New Mexico of 2.5 percent annually for 1980-1985, and 3.1 percent annually for 1985-1990. These growth rates are slightly above those projected for the United States as a whole.

### **ANALYSIS OF OB AREAS (2.2.3)**

This section presents baseline income and earnings data for the counties potentially affected by proposed operating base locations. Personal income by major source, total labor and proprietors income by type and industry, and selected earnings per worker data are presented. The principal source of data is the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System. Data are presented through 1979. Personal income per capita rates were calculated using state-supplied estimates of population in order to more accurately represent income per capita on a place-of-residence basis. All data are current dollar estimates unless otherwise noted.

#### **Beryl (2.2.3.1)**

Location of an operating base at Beryl would most affect Iron, Beaver, Washington, and Lincoln counties.

##### Beaver County (2.2.3.1.1)

Total earnings in Beaver County amounted to \$16.5 million in 1979, up from \$11.4 million in 1974 (Table 2.2.3.1-1). This was less than one-fourth of Iron County earnings. Due to the strong growth in the metropolitan areas of the state, Beaver County earnings contributed only 0.2 percent of total state earnings in 1979, down from 0.3 percent in 1974. While no one economic sector dominates the Beaver



TABLE 2.2.2.2-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

## NEW MEXICO

	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS	3138734	3506006	3966630	4493835	5136825	5834395
OTHER LABOR INCOME	204650	260863	321615	386453	457186	536885
PROPRIETORS INCOME	379414	424358	433833	481389	626970	681204
FARM	120569	151870	113638	106747	185343	190975
NON-FARM	258845	272488	320195	371642	441627	490229
FARM	159061	194934	161404	153632	241215	271416
NON-FARM	3563737	3996293	4560674	5208045	5979766	6781068
PRIVATE	2441069	2746134	3170970	3694923	4311230	4969335
AG. SERV., FOR. FISH, AND OTHER	13891	13291	14442	17420	20744	23517
MINING	265377	308383	403440	462842	542476	666639
CONSTRUCTION	283240	317199	352128	438408	524069	564932
MANUFACTURING	257062	275631	319549	378351	433624	506661
NON-DURABLE GOODS	96271	107408	126316	145705	162221	184561
DURABLE GOODS	160791	168223	193233	232646	271403	322100
TRANSPORTATION AND PUBLIC UTILITIES	291879	323173	371484	429309	501395	585128
WHOLESALE TRADE	166219	203841	226288	255308	298540	348112
RETAIL TRADE	430477	477380	539427	604635	693565	778937
FINANCE, INSURANCE, AND REAL ESTATE	146524	157084	186264	224370	269269	305198
SERVICES	586400	670152	757948	884280	1027548	1190211
GOVERNMENT AND GOVERNMENT ENTERPRISES	1122668	1250159	1389704	1513122	1668536	1811733
FEDERAL, CIVILIAN	370756	393495	416773	449000	488599	518167
FEDERAL, MILITARY	170773	178256	185831	191807	206626	219270
STATE AND LOCAL	581139	678408	787100	872315	973311	1074296
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	3722798	4191227	4722078	5361677	6220981	7052484
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	195941	221644	250929	287562	331304	382415
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	3526857	3969583	4471149	5074115	5889677	6670069
PLUS: RESIDENCE ADJUSTMENT	-29254	-25987	-26141	-30340	-22955	-28198
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	3497603	3943596	4445008	5043775	5866722	6641871
PLUS: DIVIDENDS, INTEREST, AND RENT	642395	730251	824642	996323	1182461	1352176
PLUS: TRANSFER PAYMENTS	700327	857900	964282	1041156	1140187	1293029
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	4840325	5531747	6233932	7081254	8189370	9287076
PER CAPITA PERSONAL INCOME (\$)	4325	4836	5319	5920	6742	7482
TOTAL POPULATION (HUNDREDS)	1119062	1143825	1172030	1196091	1214604	1241315

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Table 2.2.2.2-2. Personal income per capita, selected counties, State of New Mexico, and United States, 1969-1979  
(current dollars).

County	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Chaves	2,829	2,956	3,141	3,335	3,831	4,168	4,795	5,202	5,495	6,389	7,121
Curry	3,191	3,742	3,613	3,931	4,610	4,697	5,015	5,346	5,825	7,047	7,256
DeBaca	2,603	2,773	3,012	3,708	4,217	3,611	4,479	4,729	4,985	5,879	6,899
Harding	2,619	2,922	2,606	2,982	3,621	2,452	4,041	3,920	3,926	5,625	6,467
Quay	2,399	2,906	2,858	3,288	3,957	4,031	4,473	4,298	4,679	6,055	6,492
Roosevelt	2,658	2,842	2,941	3,101	3,733	3,152	4,533	4,605	4,889	5,731	6,539
Union	3,055	4,688	4,229	4,458	5,443	4,505	6,747	4,126	4,495	8,377	10,912
New Mexico	2,820	3,063	3,287	3,585	3,950	4,326	4,835	5,319	5,921	6,757	7,483
United States	3,667	3,893	4,132	4,493	4,981	5,428	5,861	6,401	7,035	7,846	8,757

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Source: U.S. Dept. of Commerce, April 1981; New Mexico Dept. of Employment Security.

Table 2.2.2.2-3. Wage and salary earnings per worker, selected counties, State of New Mexico, and United States, 1974-1979 (current dollars).

County	1974	1975	1976	1977	1978	1979
Chaves	6,301	6,936	7,611	8,108	8,894	9,675
Curry	7,470	8,029	8,563	9,053	9,854	10,675
DeBaca	5,812	6,050	6,487	6,878	7,522	8,382
Harding	5,541	5,980	6,749	6,903	7,788	8,927
Quay	6,054	6,419	6,916	7,409	8,403	9,700
Roosevelt	5,713	6,413	7,149	7,619	8,532	9,418
Union	5,384	5,902	6,561	6,749	7,804	8,347
New Mexico	7,789	8,505	9,156	9,851	10,719	11,658
United States	8,909	9,572	10,283	10,986	11,855	12,884

T5112/9-2-81

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, April 1981.

TABLE 2.2.3.1-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

BEAVER	UTAH	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		8184	8134	9182	10007	10619	11696
OTHER LABOR INCOME		549	512	620	736	817	848
PROPRIETORS INCOME		2693	2048	3023	2913	4190	3911
FARM		1189	352	874	431	1209	550
NON-FARM		1504	1696	2149	2482	2981	3361
FARM		1553	776	1291	895	1718	1084
NON-FARM		9873	9918	11534	12761	13908	15371
PRIVATE		7613	7317	8673	9923	10756	12001
AG. SERV., FOR., FISH., AND OTHER		38	37	35	37	44	49
MINING		1247	406	430	435	938	1142
CONSTRUCTION		606	668	889	1164	1341	1895
MANUFACTURING		422	503	745	975	961	654
NON-DURABLE GOODS		395	479	646	775	668	422
DURABLE GOODS		27	24	99	200	293	232
TRANSPORTATION AND PUBLIC UTILITIES		2577	2606	3062	3439	3341	3777
WHOLESALE TRADE		61	170	163	124	162	195
RETAIL TRADE		1557	1647	1849	1981	2246	2556
FINANCE, INSURANCE, AND REAL ESTATE		288	399	417	538	563	562
SERVICES		817	881	1083	1230	1160	1171
GOVERNMENT AND GOVERNMENT ENTERPRISES		2260	2601	2861	2838	3152	3370
FEDERAL, CIVILIAN		450	489	526	545	646	709
FEDERAL, MILITARY		55	55	54	57	65	77
STATE AND LOCAL		1755	2057	2281	2236	2441	2584
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		11426	10694	12825	13656	15626	16455
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		547	559	798	927	1013	1174
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		10879	10135	12027	12729	14613	15281
PLUS: RESIDENCE ADJUSTMENT		-123	-87	-104	-101	-72	-57
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		10756	10048	11923	12628	14541	15224
PLUS: DIVIDENDS, INTEREST, AND RENT		2106	2498	2614	3000	3331	3830
PLUS: TRANSFER PAYMENTS		2824	3700	4105	4509	4860	5425
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		15686	16246	18642	20137	22732	24479
PER CAPITA PERSONAL INCOME (\$)		3917	3976	4558	4928	5360	5611
TOTAL POPULATION (HUNDREDS)		4005	4086	4090	4086	4241	4363

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

County economy, earnings generated in the transportation and public utilities, government (principally state and local government), and retail trade sectors contributed the majority of earnings generated in the county in 1979.

Personal income per capita has historically been substantially below both state and U.S. averages (Figure 2.2.3.1-1). While continued growth is evident throughout the 1969-1979 period, income per capita growth rates have fallen behind both state and the United States rates since 1973. At its best, Beaver County per capita income was 87.8 percent of the state average in 1971 and had declined to 77.4 percent of the state average by 1979. Comparison to the U.S. average reveals an even lower level of comparative economic well-being--county per capita income was only 63.5 percent of the U.S. average in 1979. Similarly, earnings (total wage and salary disbursements) per worker is substantially lower than state averages--\$9,540 in 1979 compared to \$11,951 for the state as a whole (see Section 3.2.3.2 of the FEIS).

These data reflect a relatively weak economy in Beaver County. Approximately 22 percent of the personal income generated in Beaver County is from transfer payments of some kind, almost twice the state average of 11.7 percent. Without expansion within the basic sectors of the county (manufacturing, mining, etc.), residents can expect continued low income levels in the future.

#### Iron County (2.2.3.1.2)

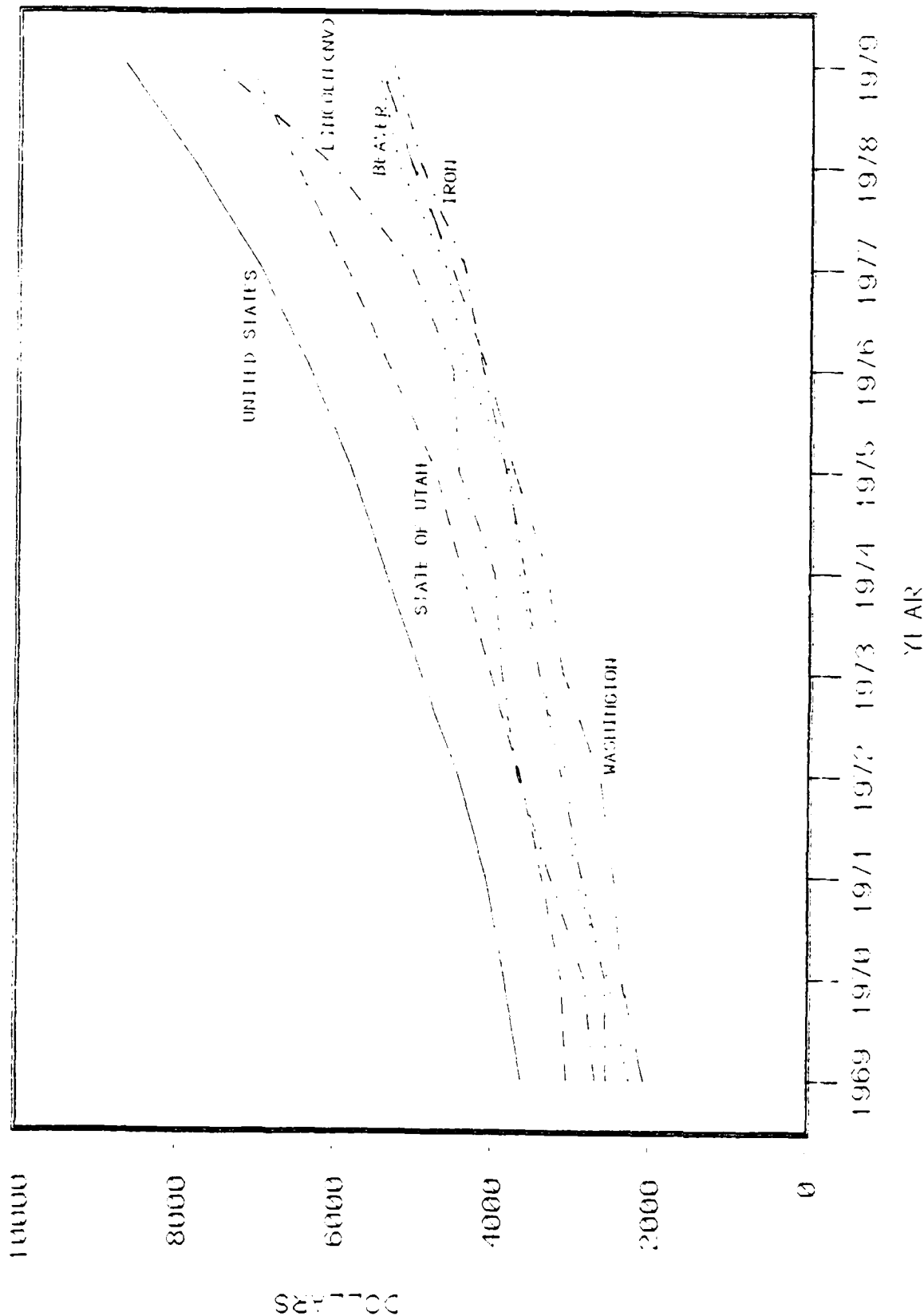
Iron County earnings amounted to \$70.9 million in 1979 up from \$39.7 million in 1974 (Table 2.2.3.1-2). In spite of significant growth, this represents less than one percent of total state earnings. Earnings generated by government employment is the single largest source of earnings, \$17.6 million in 1979, or approximately 25 percent of total county earnings. Retail trade earnings are second, accounting for \$11.5 million in 1979, or 16.3 percent of total county earnings.

Personal income per capita amounted to approximately \$5,358 in 1979 and reflects steady growth over the 1969 to 1979 period (Figure 2.2.3.1-1). Per capita income follows the same pattern as neighboring counties, in that growth has slowed somewhat in comparison to state-wide growth since 1973, and is substantially below both state and U.S. averages. At its best Iron County's income per capita was 85.1 percent of the state-wide level in 1971, declining to 74.6 percent by 1979.

Similarly, earnings per worker by source exhibit lower levels than state-wide rates--\$9,876 per average wage and salary worker in the County versus \$11,951 state-wide (see Section 3.2.3.2 of the FEIS). These data indicate a relatively less-developed economy compared to the rest of Utah, although expansion of basic economic sectors (mining, agriculture, and manufacturing) could improve local economic conditions.

#### Washington County (2.2.3.1.3)

The Washington County economy is comparable in size to that of Iron County. Washington County earnings stood at \$74.7 million in 1979, slightly larger than Iron County's \$70.9 million (Table 2.2.3.1-3). Washington County's aggregate personal income of \$124.4 million in 1979 was the highest among the rural Utah Tier I Siting



Source: U.S. Dept. of Commerce, April, 1981,  
and Utah State Population Study Committee

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Figure 2.2.3.1-1. Personal income per capita, 1969-1979, in current dollars, for the Beryl AOA, Utah, and the United States.

TABLE 2.2.3.1-2. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

IRON	UTAH				
	1974	1975	1976	1977	1978
WAGE AND SALARY DISBURSEMENTS	30831	34554	38862	44131	51674
OTHER LABOR INCOME	1990	2653	3074	3919	4804
PROPRIETORS INCOME	6923	4739	5115	4553	7075
FARM	2644	351	400	381	271
NON-FARM	4279	4388	4715	5465	6694
FARM	3424	1261	1297	87	1417
NON-FARM	36320	40695	45754	52516	62077
PRIVATE	25752	28265	31763	37602	45795
AG. SERV. FOR FISH, AND OTHER	116	142	274	282	227
MINING	3233	3352	3083	4268	5564
CONSTRUCTION	2896	3070	3830	4497	6236
MANUFACTURING	2185	2717	3433	3704	4298
NON-DURABLE GOODS	1505	1532	2013	2195	2168
DURABLE GOODS	680	1185	1420	1509	2130
TRANSPORTATION AND PUBLIC UTILITIES	2799	3206	3861	5771	7168
WHOLESALE TRADE	1210	1423	1456	1491	1726
RETAIL TRADE	7112	7672	8294	9016	10413
FINANCE, INSURANCE, AND REAL ESTATE	1761	1453	1836	2226	2814
SERVICES	4440	5230	5696	6347	7349
GOVERNMENT AND GOVERNMENT ENTERPRISES	10568	12430	13991	14914	16282
FEDERAL, CIVILIAN	2322	2991	3608	4341	4566
FEDERAL, MILITARY	305	322	345	361	332
STATE AND LOCAL	7941	9117	10038	10212	11323
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	39744	41956	47051	52603	63553
LESS PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	2029	2290	2704	3227	3814
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	37715	39666	44347	49376	59739
PLUS RESIDENCE ADJUSTMENT	-111	-101	-12	56	8
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	37604	39565	44335	49434	59747
PLUS DIVIDENDS, INTEREST, AND RENT	7399	8373	8617	9697	10758
PLUS TRANSFER PAYMENTS	6348	8307	9356	10209	11566
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	51351	56245	62308	69340	82071
PER CAPITA PERSONAL INCOME (\$)	3626	3817	4114	4464	5033
TOTAL POPULATION (HUNDREDS)	14161	14734	15147	15532	16308

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

TABLE 2.2.3.1-3 PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

WASHINGTON		1974	1975	1976	1977	1978	1979
UTAH							
WAGE AND SALARY DISBURSEMENTS		24935	27782	33159	38502	45899	57158
OTHER LABOR INCOME		1367	1749	2263	2820	3486	4384
PROPRIETORS INCOME		6569	6689	7847	9730	11569	12817
FARM		1717	1456	1677	1870	2178	2368
NON FARM		4852	5233	6170	7860	9391	10449
FARM		2094	1890	2111	2352	2925	2925
NON FARM		30737	34330	41158	48700	59248	74844
PRIVATE		22880	25345	31225	37436	46388	57715
AG. SERV. FOR. FISH. AND OTHER		246	296	244	363	434	478
MINING		-110	10	114	251	610	1075
CONSTRUCTION		4043	3506	4442	5636	7610	9313
MANUFACTURING		2264	2895	4478	5450	6422	8635
NON DURABLE GOODS		1592	1906	2879	3359	3841	4891
DURABLE GOODS		672	989	1599	2091	2581	3744
TRANSPORTATION AND PUBLIC UTILITIES		1485	1760	2038	2531	2860	3665
WHOLESALE TRADE		2054	2931	3422	2806	3252	4108
RETAIL TRADE		6720	7483	8686	10096	12032	14139
FINANCE, INSURANCE, AND REAL ESTATE		1243	1259	1619	2146	2872	4047
SERVICES		4935	5205	6182	8157	10296	12255
GOVERNMENT AND GOVERNMENT ENTERPRISES		7857	8985	9933	11264	12860	14099
FEDERAL, CIVILIAN		1611	1773	1972	2208	2384	2589
FEDERAL, MILITARY		385	402	439	467	510	430
STATE AND LOCAL		5861	6810	7522	8589	9966	11080
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		32831	36220	43269	51052	61954	74739
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P OF WK		1859	2094	2536	3016	3641	4177
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		30972	34126	40733	48036	58313	70562
PLUS: RESIDENCE ADJUSTMENT		2940	3436	2401	3149	4671	5075
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		33912	37562	43134	51185	62984	75637
PLUS: DIVIDENDS, INTEREST, AND RENT		11543	14691	16298	19472	24702	25156
PLUS: TRANSFER PAYMENTS		10325	13149	15257	17802	20844	23632
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000)		55780	65402	74689	88459	105530	124425
PER CAPITA PERSONAL INCOME (1)		3166	3665	3940	4462	4987	5307
TOTAL POPULATION (HUNDREDS)		17617	17844	18959	19823	21163	23444

(1) BETWEEN 1970 AND 1979, AND NOT EQUAL TO ZERO DATA INCLUDED IN TOTALS

(2) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION DATA INCLUDED IN TOTALS

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



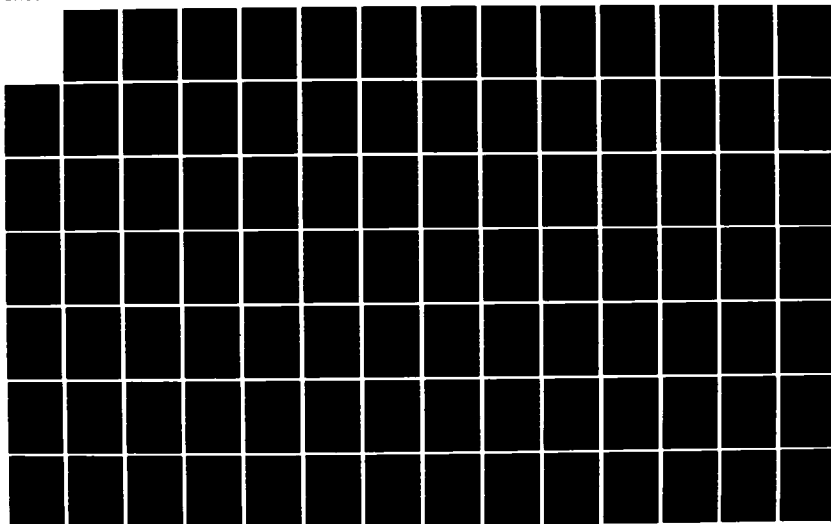
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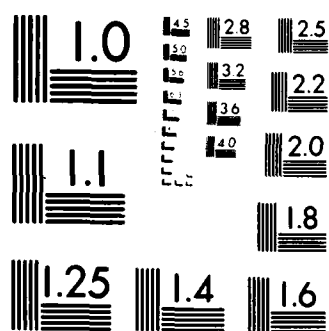
DEPLOYMENT AREA SELECTION AND LAND  
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Area. Dividends, interest, rental income, and transfer payments account for a large share of Washington County's personal income, 39.2 percent in 1979.

Total county earnings grew at an average annual rate of 18 percent from 1974 through 1979, significantly above the state average annual earnings growth rate of 13 percent. County personal income grew at nearly the same rate as earnings--an average of 17 percent annually from 1974 through 1979.

Retail trade was the leading source of county earnings in 1979, accounting for 19 percent of total earnings. Services and state and local government also were important earnings sources in the county, accounting for 16 percent and 15 percent shares, respectively.

Manufacturing earnings constitute a significantly smaller earnings source--12 percent of total earnings in 1979. Earnings in manufacturing have shown remarkably rapid growth, however, averaging 31 percent growth annually during the 1974-1979 period. Service sector earnings grew 20 percent annually during this period, while retail trade averaged 16 percent annual growth, somewhat less than the county earnings average.

Per capita income in Washington County--as in Iron and Beaver counties--is significantly below the state average and has been below average throughout the 1970s (Figure 2.2.3.1-1). Since 1976, per capita income in Washington County has surpassed income per capita in Iron County, but remains slightly below average income in Beaver County.

Average wage and salary earnings per worker (excluding other labor income) in Washington County was about \$9,300 annually in 1979, 78 percent of state average earnings per worker.

#### Lincoln County (2.2.3.1.4)

Table 2.2.3.1-4 presents selected income and earnings data for Lincoln County, 1974-1979. Total earnings amounted to approximately \$18.4 million in 1979. Although immediately adjacent to Clark County, Nevada, Lincoln County does not enjoy the benefits of a particularly strong tourism or gaming industry. Earnings generated in the mining sector, however, have contributed greatly to earnings growth, particularly in the 1977-1979 period. Historically, earnings generated in the government sector, principally at the state and local level, has been the largest single earnings source in the county.

Personal income per capita historically has been substantially below both the U.S. and Nevada averages, although continued growth is evident throughout the 1969-1979 period (Figure 2.2.3.1-1). Lincoln County has made substantial gains in per capita income since 1976, so that the 1979 level is up to 87.0 percent of the U.S. average. This increase follows closely the gains experienced in the state of Nevada as a whole over the comparable time period. Per capita income in the county is significantly higher than in Iron, Beaver, and Washington counties, and in 1979 surpassed the Utah state average.

In conjunction with the rapid growth in earnings generated in the mining sector, earnings per worker levels in the county as a whole have moved closer to the

TABLE 2.2.3.1-4 PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

	LINCOLN	NEVADA	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS	7816	8920	8712	10588	13935	15324	1688	1408
OTHER LABOR INCOME	454	674	561	937	1631	1688	1408	501
PROPRIETORS INCOME	168	653	-145	-661	646	1408	501	907
FARM	-474	-6	-867	-1208	759	907	1426	16994
NON-FARM	642	659	722	547	759	907	1426	12838
FARM	98	596	-212	-454	742	1426	16994	12838
NON-FARM	8340	9651	9340	11318	15470	16994	12838	40
PRIVATE	5312	5921	5179	7044	10867	12838	40	6022
AG SERV., FOR., FISH., AND OTHER	15	24	27	30	35	40	6022	556
MINING	1706	2221	943	2322	5898	6022	556	131
CONSTRUCTION	462	136	278	311	183	556	131	131
MANUFACTURING	198	210	148	134	89	131	131	131
NON-DURABLE GOODS	145	210	148	134	89	131	131	131
DURABLE GOODS	53	0	0	0	0	0	0	0
TRANSPORTATION AND PUBLIC UTILITIES	1071	1079	1162	1352	1462	1607	1607	1607
WHOLESALE TRADE	42	45	49	54	60	70	70	70
RETAIL TRADE	922	1023	1145	1300	1361	1681	1681	1681
FINANCE, INSURANCE, AND REAL ESTATE	56	89	130	154	186	246	246	246
SERVICES	840	1094	1297	1387	1593	2485	2485	2485
GOVERNMENT AND GOVERNMENT ENTERPRISES	3028	3730	4161	4274	4603	4156	4156	4156
FEDERAL, CIVILIAN	248	467	527	511	404	457	457	457
FEDERAL, MILITARY	29	33	34	33	40	37	37	37
STATE AND LOCAL	2751	3230	3600	3730	4159	3662	3662	3662
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	8438	10247	9128	10864	16212	18420	18420	18420
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	472	532	509	580	705	809	809	809
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	7966	9715	8619	10284	15507	17611	17611	17611
PLUS: RESIDENCE ADJUSTMENT	-1223	-1547	-294	-829	-1919	-1959	-1959	-1959
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	6743	8168	8325	9455	13588	15652	15652	15652
PLUS: DIVIDENDS, INTEREST, AND RENT	1354	1389	1538	1919	2353	2771	2771	2771
PLUS: TRANSFER PAYMENTS	2022	2624	3001	3363	3739	4223	4223	4223
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	10119	12181	12864	14737	19680	22646	22646	22646
PER CAPITA PERSONAL INCOME (\$)	4118	4584	4589	5124	6063	6388	6388	6388
TOTAL POPULATION (HUNDREDS)	2457	2657	2803	2876	3246	3545	3545	3545

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

statewide averages. In 1979, total earnings (wage and salary disbursements) per worker stood at approximately \$13,097 compared to state of Nevada average of \$13,111 (see Section 3.2.3.2 of the FEIS). Continued earnings growth in Lincoln County will depend on expansion of the basic sectors of the region, principally mining activities, although agricultural and manufacturing could contribute substantially.

#### **Coyote Spring (2.2.3.2)**

Location of an operating base in Coyote Spring would have the most effect on Clark County and Lincoln County.

##### Clark County (2.2.3.2.1)

Earnings and personal income data for Clark County (1974-1979) are presented in Table 2.2.3.2-1. Total labor and proprietor's income by place of work amounted to approximately \$3.6 billion in 1979, accounting for about 54 percent of all the labor and proprietor income generated in the state as a whole. This relationship has not changed appreciably since 1974. Service sector earnings dominate the Clark County economy-- 42 percent of the county's earnings were generated in this sector in 1979. With much of this income generated by the relatively strong tourism industry personal income per capita rates in the county are quite high --\$10,300 in 1979 compared to the U.S. average of \$8,800 (Section 3.2.3.2 of the FEIS). The historic growth in personal income per capita is presented graphically in Figure 2.2.3.2-1. Both Clark County and the state exhibit very similar growth patterns. An increased rate of growth in personal income per capita relative to the U.S. average is evident in the years 1976-1979. Much of this increase can be attributed to strong increases in mining, construction, and manufacturing earnings.

These figures, however, are unadjusted for the effects of inflation. In the aggregate, very little change has occurred in real terms. Total labor and proprietor's income per worker in 1979 amounted to approximately \$14,180, virtually identical to the 1969 level of \$14,170 in 1979 dollars (U.S. Department of Commerce, 1981). Thus, while the Clark County economy has shown strong growth in many of its basic sectors, real earnings per worker have not increased over the years. Continued earnings growth in Clark County will depend upon continued tourism while expansion of other basic activities (manufacturing, mining, and agriculture activities) would also be necessary.

##### Lincoln County (2.2.3.2.2)

Recent trends in income and earnings in Lincoln County are discussed in Sections 3.2.3.2 of the FEIS and 2.2.3.1.4 of this ETR.

#### **Delta (2.2.3.3)**

Principal counties potentially affected by location of an operating base in the Delta area are Millard, Juab, and Beaver.

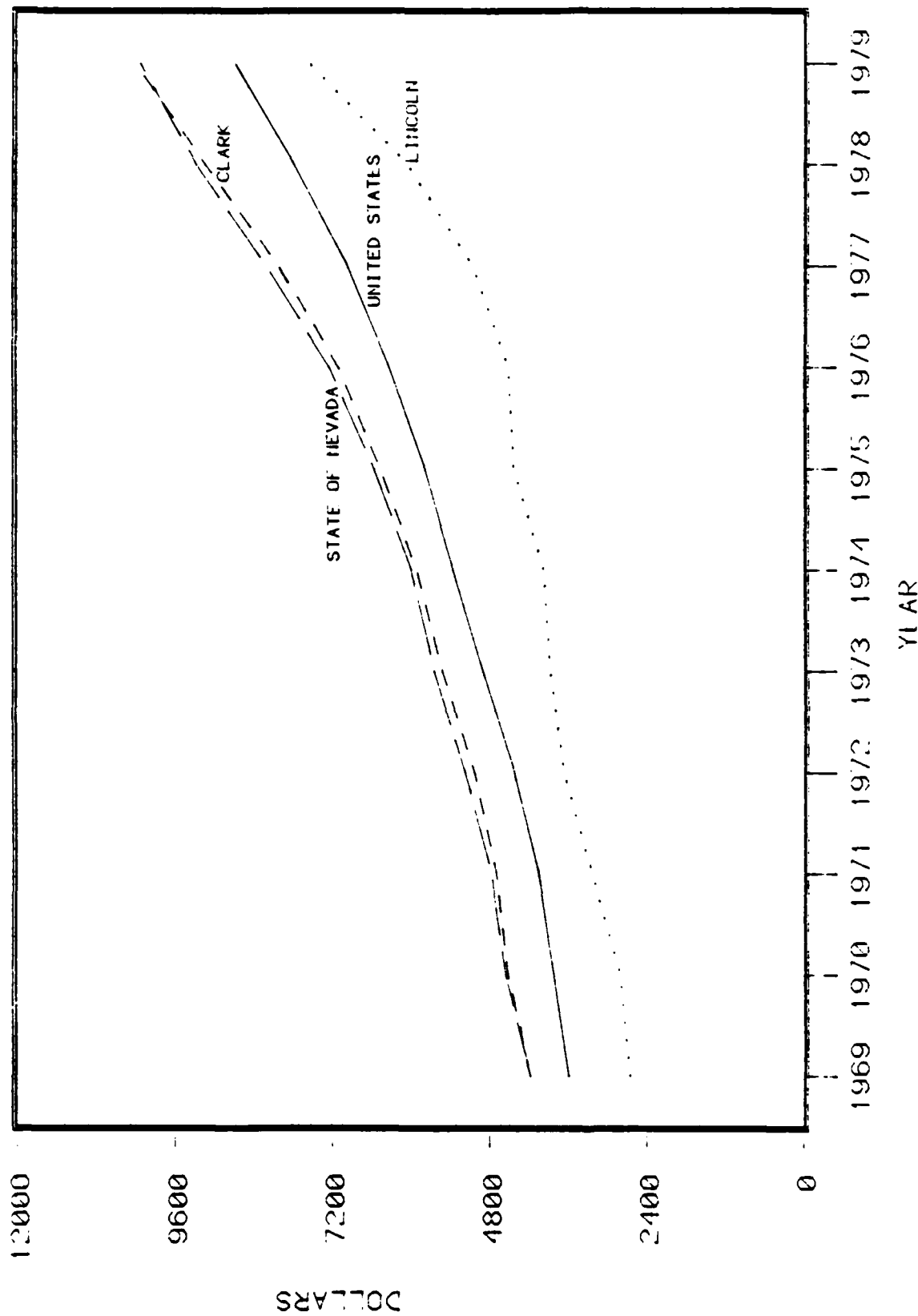
TABLE 2.2.3.2-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

CLARK	NEVADA	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		144112	1568286	1771336	2083942	2506309	2939487
OTHER LABOR INCOME		57896	71756	87059	108324	134261	163434
PROPRIETORS INCOME		71574	75878	100704	124881	142602	156752
FARM		1097	1309	2054	2189	1494	1621
NON-FARM		70477	74569	98650	122692	141108	155131
FARM		2325	2602	3460	3821	3334	3613
NON-FARM		1568857	1713318	1955639	2313326	2779838	3256060
PRIVATE		1290235	1405093	1618045	1914350	2342397	2773031
AG. SERV., FOR., FISH., AND OTHER		3746	3394	4328	5694	6512	8365
MINING		2042	2739	1706	1695	3321	6839
CONSTRUCTION		136369	118637	150632	197835	294388	341103
MANUFACTURING		62135	68976	74132	87505	104728	126738
NON-DURABLE GOODS		25136	28038	30993	34398	39013	44144
DURABLE GOODS		36999	40938	43139	53107	65715	82594
TRANSPORTATION AND PUBLIC UTILITIES		118894	136125	160842	194381	230900	263992
WHOLESALE TRADE		47476	53472	62414	71262	92530	111882
RETAIL TRADE		182252	204166	239811	275641	334231	400817
FINANCE, INSURANCE, AND REAL ESTATE		62593	63835	76691	97484	121004	157221
SERVICES		674728	753749	847489	982853	1154783	1356074
GOVERNMENT AND GOVERNMENT ENTERPRISES		278622	308225	337594	398976	437441	483029
FEDERAL, CIVILIAN		56544	64852	73494	79487	84493	87548
FEDERAL, MILITARY		72206	80027	89423	97264	96477	103997
STATE AND LOCAL		149872	163346	174677	222225	256471	291484
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		1571182	1715920	1959099	2317147	2783172	3259673
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		82279	87349	92598	105704	125461	146236
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		1488903	1628571	1866501	2211443	2657711	3113437
PLUS: RESIDENCE ADJUSTMENT		27883	31634	27763	19447	13856	8512
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		1516786	1660205	1894264	2230890	2671567	3121949
PLUS: DIVIDENDS, INTEREST, AND RENT		204460	233950	274453	330773	398636	464224
PLUS: TRANSFER PAYMENTS		198557	270136	309341	355847	399701	456665
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		1919803	2164291	2478058	2917510	3469904	4042838
PER CAPITA PERSONAL INCOME (\$)		5981	6544	7176	8083	9231	10175
TOTAL POPULATION (HUNDREDS)		320961	330711	345302	360935	375890	397345

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



Source: U.S. Dept. of Commerce, April, 1981,  
and Nevada State Planning Coordinator's Office

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Figure 2.2.3.2-1. Personal income per capita, 1969-1979, in current dollars, for the Coyote Spring AOA, Nevada, and the United States.

#### Millard County (2.2.3.3.1)

Total earnings in Millard County amounted to \$31.3 million in 1979, up from \$21.4 million in 1974 (Table 2.2.3.3-1). However, due to strong earnings growth in the rest of the state, Millard County earnings accounted for only 0.4 percent of total state earnings in 1979, down from 0.5 percent in 1974. Agriculture dominates the area's economy, with farm earnings accounting for the single largest component of total earnings in the economy (\$7.7 million in 1979). The bulk of these earnings accrue to farm proprietors (79 percent) versus wage and salary workers (21 percent).

Regions with a heavy dependence upon agriculture can experience strong fluctuations in personal income per capita. However, Millard County also has a diversified economic base, so per capita income showed steady growth in the 1969-1979 period even in the face of fluctuating farm earnings (Figure 2.2.3.3-1). Personal income per capita amounted to \$5,088 in 1979, up from \$2,511 in 1969. However, rates are substantially less than state and U.S. rates. Per capita income in Millard County was only 71 percent of the state average and 58 percent of the U.S. average.

Earnings per worker estimates followed a similar pattern with the exception of farm earnings per worker. While total earnings of \$8,231 (wage and salary disbursements) per worker fell below the state average of \$11,951, farm wage and salary earnings per worker in the county amounted to \$6,018, versus \$5,808 for the state. Farm proprietor income per worker was \$8,701 in the county versus \$4,539 statewide in 1979 (U.S. Department of Commerce, 1981; see ETR-2H).

#### Beaver County (2.2.3.3.2)

Recent trends in income and earnings in Beaver County are discussed in Sections 3.2.3.2 of the FEIS and 2.2.3.1.1 of this ETR.

#### Juab County (2.2.3.3.3)

Total earnings in Juab County amounted to \$20.1 million in 1979, up from \$13.3 in 1974 (Table 2.2.3.3-2). However, due to earnings growth in the remainder of the state, Juab County earnings accounted for only 0.3 percent of total state earnings, down slightly from 1974. Earnings generated in the manufacturing, government, and retail sectors accounted for the majority of earnings in the county in 1979.

Personal income per capita amounted to approximately \$5,111 in 1979. This reflects continued growth over the 1969-1979 period (Figure 2.2.3.3-1). However, rates were significantly lower than state averages and exhibited reduced levels of growth since 1973. At its best, Juab County's per capita income was 75 percent of the state average in 1972, declining to 62 percent of the state average in 1977. Modest gains have increased per capita rates between 1977 and 1979; however, the 1979 rates are just 58 percent of the U.S. average.

Similarly, earnings per worker are lower than state averages, \$9,702 earnings per wage and salary worker in the county versus \$11,951 statewide (see Section 3.2.3.2 of the FEIS). Only farm wage and salary earnings per worker compare favourably to state averages--\$5,808 in the county versus \$5,750 statewide.



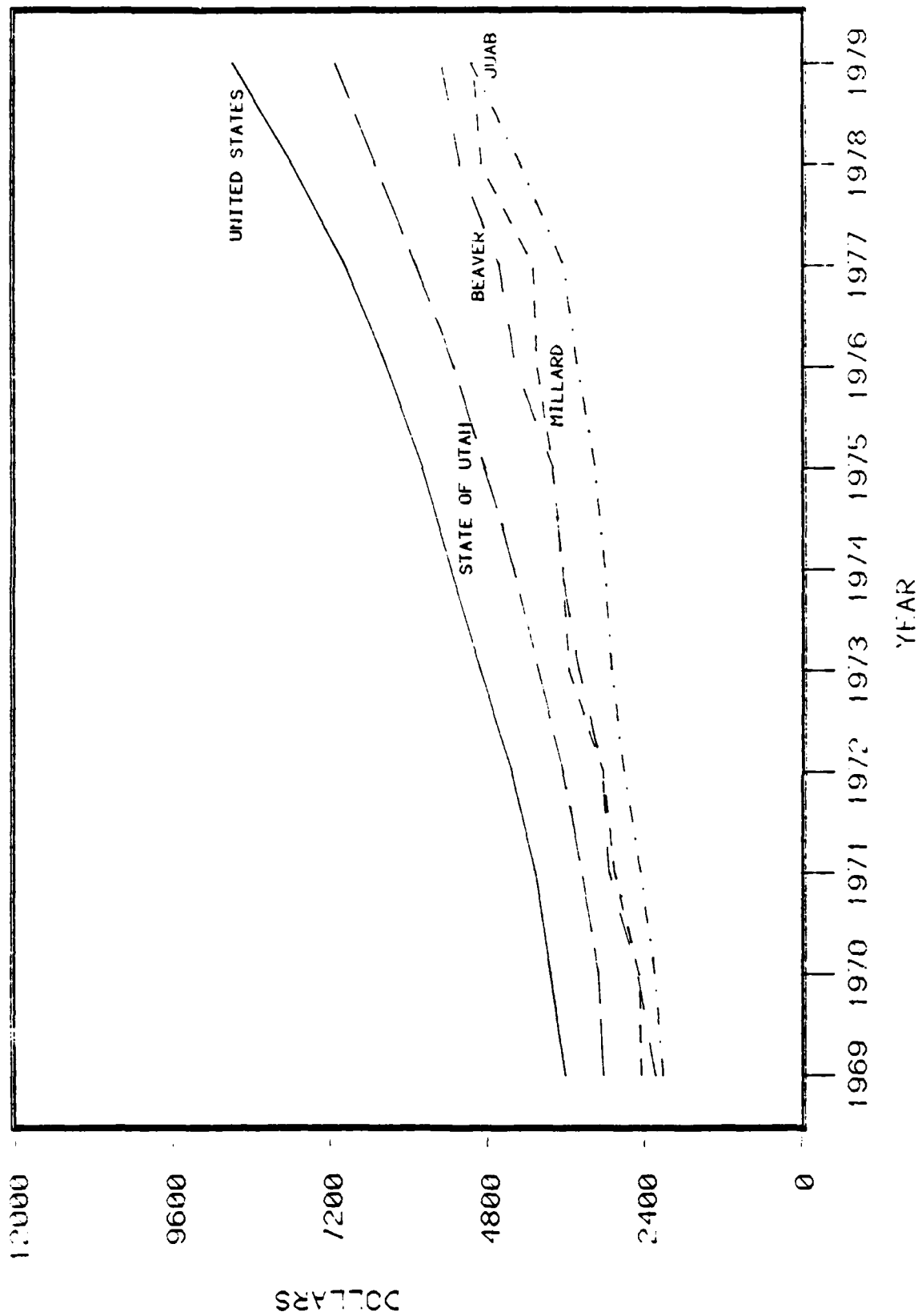
TABLE 2.2.3.3-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

MILLARD	UTAH	1974	1975	1976	1977	1978	1979
		----	----	----	----	----	----
WAGE AND SALARY DISBURSEMENTS		11882	13866	13873	13948	15461	19499
OTHER LABOR INCOME		744	1017	1136	1273	1502	1940
PROPRIETORS INCOME		8736	6636	7233	6875	12147	9897
FARM		6403	4369	4985	3814	8512	6082
NON-FARM		2333	2267	2248	3061	3635	3815
FARM		7520	5665	6269	5244	10077	7725
NON-FARM		13842	15854	15973	16852	19033	23611
PRIVATE		9375	10881	10633	11970	13710	17701
AG. SERV., FOR., FISH., AND OTHER		329	336	309	949	1125	1243
MINING		961	829	815	936	1415	2290
CONSTRUCTION		1101	1840	832	719	835	2400
MANUFACTURING		984	1131	1258	1403	1695	1855
NON-DURABLE GOODS		914	973	1023	1046	1264	1421
DURABLE GOODS		70	158	235	357	431	434
TRANSPORTATION AND PUBLIC UTILITIES		1590	1878	1990	2253	2989	2989
WHOLESALE TRADE		769	1157	1175	1032	1111	1264
RETAIL TRADE		2316	2277	2542	2701	2911	3251
FINANCE, INSURANCE, AND REAL ESTATE		338	312	488	547	683	711
SERVICES		987	1121	1224	1430	1407	1698
GOVERNMENT AND GOVERNMENT ENTERPRISES		4467	4973	5340	4882	5323	5910
FEDERAL, CIVILIAN		1011	972	927	772	840	988
FEDERAL, MILITARY		106	106	108	116	123	149
STATE AND LOCAL		3350	3895	4305	3994	4360	4773
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		21362	21519	22242	22096	29110	31336
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		797	927	994	1121	1261	1434
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		20565	20592	21248	20975	27849	29902
PLUS: RESIDENCE ADJUSTMENT		386	374	1592	1859	1789	602
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		20951	20966	22840	22834	29638	30504
PLUS: DIVIDENDS, INTEREST, AND RENT		3992	4803	5194	6085	6760	7820
PLUS: TRANSFER PAYMENTS		4420	5217	5666	6041	6755	7467
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		29363	30986	33700	34960	43153	45791
PER CAPITA PERSONAL INCOME (\$)		3865	3912	4146	4228	5158	5161
TOTAL POPULATION (HUNDREDS)		7597	7921	8129	8268	8366	8872

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



Source: U.S. Dept. of Commerce, April 11, 1981,  
and Utah State Population Work Committee

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Figure 2.2.3.3-1. Personal income per capita, 1969-1979, in current dollars, for the Delta AOA, Utah, and the United States.

TABLE 2.2.3.3-2. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

	UTAH					
	1974	1975	1976	1977	1978	1979
JUAB	----	----	----	----	----	----
WAGE AND SALARY DISBURSEMENTS	10238	10436	10719	11723	12881	16774
OTHER LABOR INCOME	874	981	1083	1217	1317	1646
PROPRIETORS INCOME	2167	1298	1068	960	2197	1671
FARM	1044	309	266	319	949	126
NON-FARM	1123	989	802	641	1248	1545
FARM	1200	492	447	520	1168	356
NON-FARM	12079	12223	12423	13380	15227	19735
PRIVATE	9855	9679	9622	10259	11752	15896
AG SERV. FOR FISH. AND OTHER	39	36	34	37	43	47
MINING	1109	711	57	-478	-43	1178
CONSTRUCTION	672	782	333	370	479	2201
MANUFACTURING	4260	4329	4882	5167	5384	6042
NON-DURABLE GOODS	3695	3550	4134	4232	4395	5489
DURABLE GOODS	565	779	748	935	989	553
TRANSPORTATION AND PUBLIC UTILITIES	533	618	643	734	746	997
WHOLESALE TRADE	464	556	585	536	627	745
RETAIL TRADE	1800	1752	1955	2336	2576	2869
FINANCE, INSURANCE, AND REAL ESTATE	134	166	251	337	389	427
SERVICES	844	729	882	1220	1551	1390
GOVERNMENT AND GOVERNMENT ENTERPRISES	2224	2544	2801	3121	3475	3839
FEDERAL, CIVILIAN	319	339	379	412	393	368
FEDERAL, MILITARY	68	67	67	71	80	96
STATE AND LOCAL	1837	2138	2355	2638	3002	3375
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	13279	12715	12870	13900	16395	20091
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	708	718	762	859	967	1110
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	12571	11997	12108	13041	15428	18981
PLUS: RESIDENCE ADJUSTMENT	-1309	-972	134	554	1437	1188
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	11262	11025	12242	13595	16865	20169
PLUS: DIVIDENDS, INTEREST, AND RENT	1670	2041	2333	2825	3132	3616
PLUS: TRANSFER PAYMENTS	3063	3714	3935	4310	4857	5347
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	15995	16780	18510	20730	24854	29132
PER CAPITA PERSONAL INCOME (\$)	3261	3369	3696	4028	4649	5243
TOTAL POPULATION (HUNDREDS)	4905	4981	5008	5146	5346	5556

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

Without expansion within the basic sectors of the county, residents of the county can expect continued low levels of income and earnings in the future.

#### **Ely (2.2.3.4)**

##### **White Pine County (2.2.3.4.1)**

Earnings and personal income data for White Pine County (1974-1979) are presented in Table 2.2.3.4-1. Total earnings (labor and proprietors income by place of work) amounted to approximately \$44.5 million in 1979. This represents less than one percent of total state earnings. Very little growth has occurred in the 1974-1979 period, with losses in mining sector earnings contributing heavily to the extremely low overall earnings growth. Much of the loss in mining is attributable to the reduced copper mining and smelting activities beginning in 1976. The principal source of earnings in the county currently comes from the government sector. Earnings from government, as a percentage of total county earnings, rose from approximately 15.4 percent in 1974 to 23 percent in 1979.

Figure 2.2.3.4-1 displays personal income per capita for the years 1969 through 1979 for the state, White Pine County, and the United States. In 1976, the down-turn in mining activities substantially affected per capita income. This continued reduction in 1979 has kept the county's per capita income substantially below the U.S. and state-wide average. With the reduction of this very important economic activity in the county, transfer payments, primarily in the form of unemployment insurance benefits, have provided an increasing share of total personal income between 1974 and 1979 --from 10 percent in 1974 to almost 20 percent in 1979 (Table 2.2.3.4-1). The county may be able to recoup some of its economic losses if the reopening of the copper mines and smelter becomes economically feasible. However, the county's income per capita would very probably remain below the state average unless growth of unprecedented proportions were to result in a substantial broadening of its economic base.

Earnings per worker similarly fall below state averages. Earnings among wage and salary workers in the county amounted to \$11,827 in 1979, approximately 90 percent of the state average of \$13,111 (U.S. Department of Commerce, 1981). These earnings have historically trailed the state average.

#### **Milford (2.2.3.5)**

The principal counties potentially affected by location of an operating base in the Milford area are Beaver, Iron, and Millard counties. Recent trends in income and earnings in these counties have been discussed in Sections 3.2.3.2 of the FEIS and Sections 2.2.3.1.2 and 2.2.3.3.1 of this ETR. Figure 2.2.3.5-1 presents a graphic description of these trends.

#### **Clovis (2.2.3.6)**

The counties potentially most affected by location of an operating base in the Clovis area are Curry and Roosevelt counties.

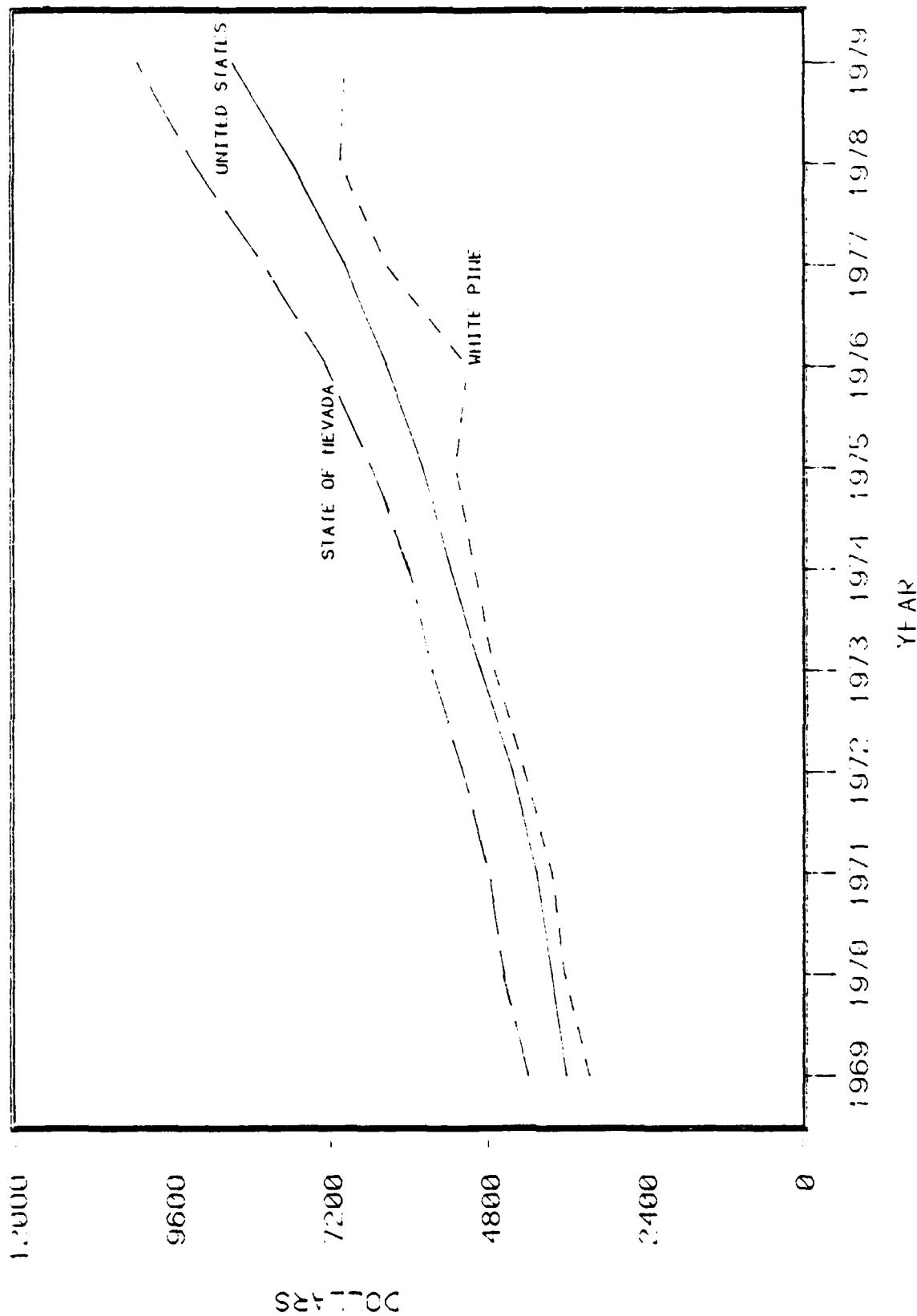
TABLE 2.2.3.4-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

WHITE PINE	NEVADA	1974	1975	1976	1977	1978	1979
		----	----	----	----	----	----
WAGE AND SALARY DISBURSEMENTS		36961	36707	31168	37026	37253	35657
OTHER LABOR INCOME		3654	4423	3427	4663	4327	3692
PROPRIETORS INCOME		2777	2514	2798	1399	4111	5186
FARM		248	344	-1	-545	60	703
NON-FARM		2529	2170	2799	1944	4051	4483
FARM		1011	1147	874	464	1198	1937
NON-FARM		42391	42497	36519	42624	44493	42598
PRIVATE		35696	35157	28658	34289	35106	32325
AG. SERV., FOR. FISH., AND OTHER		24	34	45	72	82	89
MINING		15446	15996	9973	13600	8874	4039
CONSTRUCTION		1139	866	869	1174	1915	2026
MANUFACTURING		7062	5754	4306	5626	7415	7062
NON-DURABLE GOODS		282	250	216	149	156	164
DURABLE GOODS		6780	5504	4090	5477	7259	6898
TRANSPORTATION AND PUBLIC UTILITIES		3260	3326	3574	2962	4894	5822
WHOLESALE TRADE		973	1025	1002	946	986	1056
RETAIL TRADE		4406	4718	4776	5069	5618	6369
FINANCE, INSURANCE, AND REAL ESTATE		589	601	738	890	990	1177
SERVICES		2797	2837	3375	3950	4332	4685
GOVERNMENT AND GOVERNMENT ENTERPRISES		6695	7340	7861	8335	9387	10373
FEDERAL, CIVILIAN		1577	1671	1823	2040	2303	2586
FEDERAL, MILITARY		118	125	120	101	112	107
STATE AND LOCAL		5000	5544	5918	6194	6966	7580
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		43402	43644	37393	43088	45691	44535
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		2184	2214	1834	2040	2015	2324
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		41218	41430	35559	41048	43676	42211
PLUS: RESIDENCE ADJUSTMENT		-3	35	96	943	-392	-231
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		41215	41465	35655	41991	43284	41980
PLUS: DIVIDENDS, INTEREST, AND RENT		4418	5047	5510	6317	7658	8964
PLUS: TRANSFER PAYMENTS		5091	7555	9520	8288	11219	12651
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		50724	54067	50685	56596	62161	63595
PER CAPITA PERSONAL INCOME (\$)		5066	5380	5174	6402	6882	7658
TOTAL POPULATION (HUNDREDS)		10013	10050	9796	8841	9032	8304

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

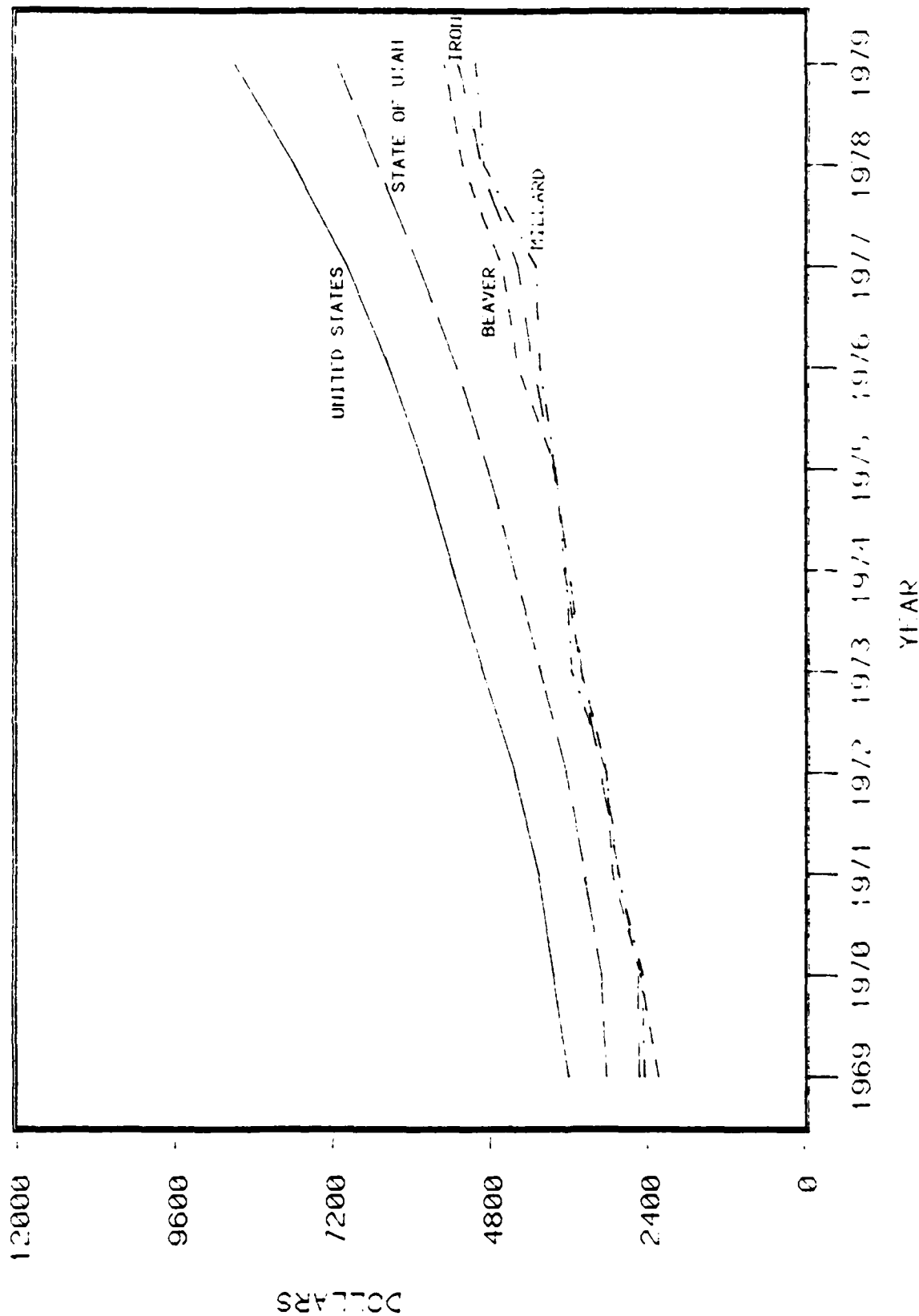
SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



Source: U.S. Dept. of Commerce, April 1981,  
and Nevada State Planning Commission, 1981.

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Figure 2.2.3.4-1. Personal income per capita, 1969-1979, in current dollars, for the Ely AOA, Nevada, and the United States.



Source: U.S. Dept. of Commerce, April 1981.  
and Utah State Population, Health, and Economic Committee

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Figure 2.2.3.5-1. Personal income per capita 1969-1979, in current dollars, for the Milford AOA, Utah, and the United States.

#### Curry County (2.2.3.6.1)

Total earnings in Curry County amounted to \$214.7 million in 1979, up from \$159.9 million in 1974 (Table 2.2.3.6-1). However, due to strong earnings growth in the remainder of the state, earnings in Curry County accounted for only 3.0 percent of total state earnings in 1979, down from 4.3 percent in 1974. The government sector, principally due to the military payroll associated with Cannon Air Force Base, is the major earnings source in the county (37.2 percent of all earnings generated in the county in 1979). Retail trade, service, transportation, and public utilities earnings follow with 13.6, 12.0, and 11.8 percent of total county earnings, respectively, in 1979.

With the relatively strong agricultural sector contributing approximately 6.1 percent to total earnings in the county (compared to 4.3 percent statewide and 2.5 percent nationwide), personal income per capita levels are relatively strong and generally have been above state levels, except during 1979 when farm proprietor's income dropped substantially from historical levels. At its best, per capita income levels in Curry County were 19.1 percent over the state average in 1970 (\$3,647 in the county versus \$3,063 statewide), although reduced growth rates since 1973 have brought the county closer to the state level (Figure 2.2.3.6-1). However, both county and state rates have historically been lower than the U.S. average.

In contrast to per capita income levels, earnings per worker estimates have historically been below state levels. Earnings (wage and salary disbursements) per worker in the county stood at \$10,675 in 1979 compared to the state average of \$11,658 in 1979 (U.S. Department of Commerce, 1981) and have been consistently below the state average since 1967. While the county has enjoyed a relatively healthy economy in recent years, this may be attributed to a continued military presence. As with most agriculture-based economies, fluctuations in income levels can be expected over time. Diversification of the area's economic base would be necessary to maintain the income levels previously enjoyed by residents of the county.

#### Roosevelt County (2.2.3.6.2)

Total earnings in Roosevelt County amounted to \$69.5 million in 1979, up from \$34.5 million in 1974 (Table 2.2.3.6-2). Earnings in the county accounted for 1.0 percent of total state earnings in 1979. Agriculture earnings are the major earnings source in the county, accounting for almost one-third of total 1979 county earnings. Earnings generated in the government sector, principally in state and local government, is the other major earnings category.

As is characteristic of an agriculture-based economy, per capita income levels in the county tend to be below average. They amounted to \$6,539 in 1979 compared to the state average of \$7,483 and the U.S. average of \$8,757 (Figure 2.2.3.6-1). At its best, Roosevelt County's personal income per capita was 94.5 percent of the state average in 1973, but dropped to 72.9 percent (\$3,152) in the following year. This is due to lower-than-average farm earnings in 1974. Such volatility is characteristically a problem in agriculture-based economies.

Similar to personal income per capita, earnings per worker also are lower than both state and U.S. averages. Earnings (wage and salary disbursements) per worker



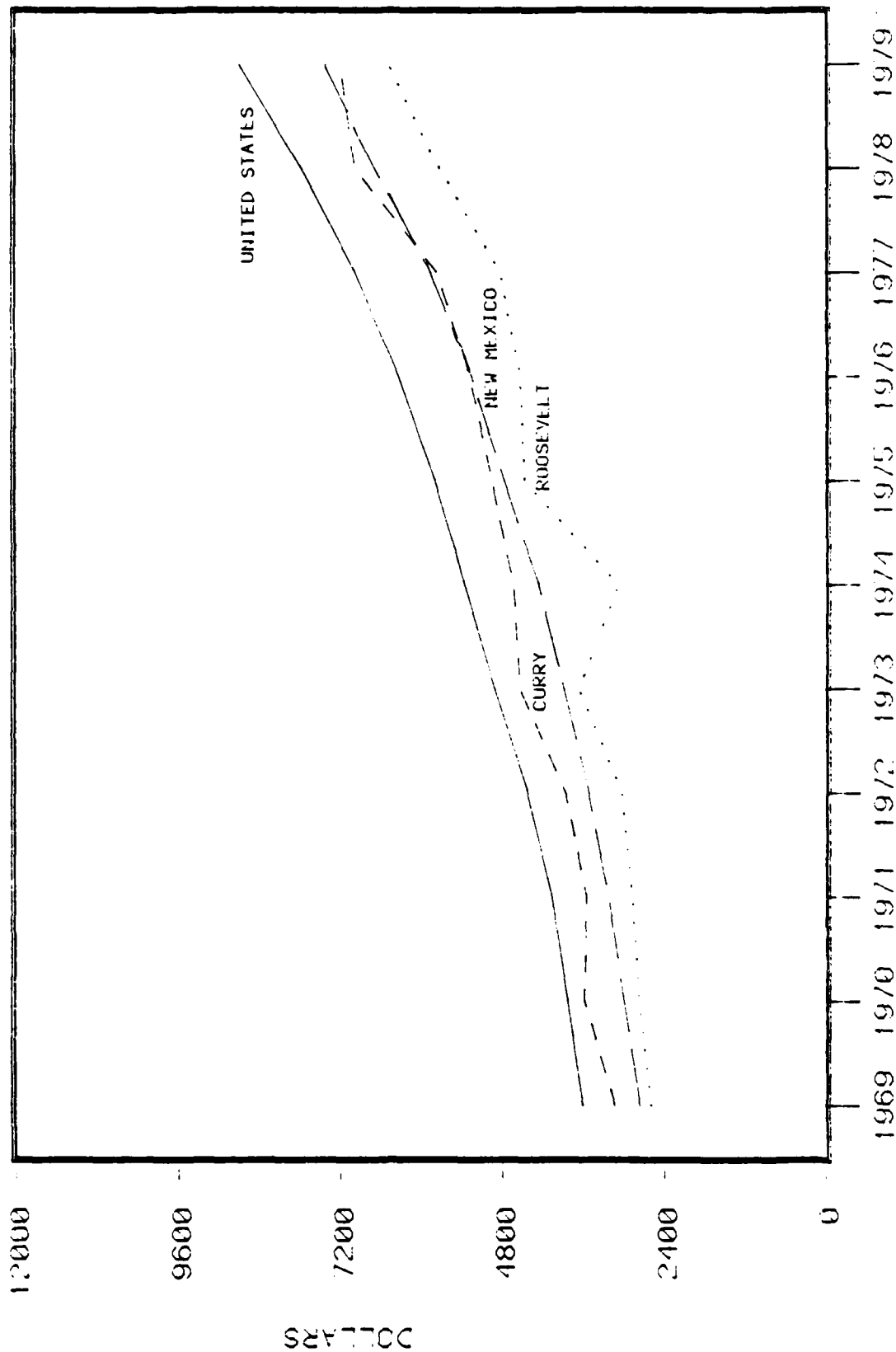
TABLE 2.2.3.6-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

CURRY	NEW MEXICO					1975	1976	1977	1978	1979
		1974	1975	1976	1977	1978	1979	1979	1979	1979
		----	----	----	----	----	----	----	----	----
WAGE AND SALARY DISBURSEMENTS		123822	128416	137248	144525	161266	172848			
OTHER LABOR INCOME		5257	6387	7687	8584	9874	11020			
PROPRIETORS INCOME		30865	33063	17836	21306	45662	30841			
FARM		18458	19191	3707	4277	26233	8968			
NON-FARM		12407	13872	14129	17029	19429	21873			
FARM		20405	21370	6125	6652	29064	13048			
NON-FARM		139539	146496	156646	167763	187738	201661			
PRIVATE		73981	78544	88172	97312	109693	121850			
AG. SERV., FOR., FISH., AND OTHER		950	426	542	683	498	560			
MINING		235	253	198	280	349	336			
CONSTRUCTION		5862	6125	6904	7704	9702	10061			
MANUFACTURING		8465	8645	10324	11307	12257	13508			
NON-DURABLE GOODS		7373	7178	8367	9012	9762	10509			
DURABLE GOODS		1092	1467	1957	2295	2495	2999			
TRANSPORTATION AND PUBLIC UTILITIES		15027	15708	18085	20009	22462	25443			
WHOLESALE TRADE		3872	6343	7049	6948	7734	8927			
RETAIL TRADE		19463	19428	21668	23585	26630	29235			
FINANCE, INSURANCE, AND REAL ESTATE		4585	4849	5583	6428	7138	8052			
SERVICES		15522	16767	17819	20368	22923	25728			
GOVERNMENT AND GOVERNMENT ENTERPRISES		65558	67952	68474	70451	78045	79811			
FEDERAL, CIVILIAN		8804	8595	8337	9297	10223	10506			
FEDERAL, MILITARY		45209	46266	45256	45546	51116	51547			
STATE AND LOCAL		11545	13091	14881	15608	16706	17758			
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		159944	167866	162771	174415	216802	214709			
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		7204	7640	8574	9647	11174	13091			
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		152740	160226	154197	164768	205628	201618			
PLUS: RESIDENCE ADJUSTMENT		1786	1818	2171	3427	6359	11476			
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		154526	162044	156368	168195	211987	213094			
PLUS: DIVIDENDS, INTEREST, AND RENT		21536	24471	27773	33765	40181	46279			
PLUS: TRANSFER PAYMENTS		24979	30662	34546	37449	41014	46100			
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		201041	217177	218687	239409	293182	305473			
PER CAPITA PERSONAL INCOME (\$)		4699	5019	5350	5826	7040	7254			
TOTAL POPULATION (HUNDREDS)		42785	43269	40877	41095	41647	42112			

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



YEAR

Source: U.S. Dept. of Commerce, April, 1981,  
and New Mexico Dept. of Employment Security

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Figure 2.2.3.6-1. Personal income per capita, 1969-1979, in current dollars, for the Clovis AOA, New Mexico, and the United States.

TABLE 2.2.3.6-2. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

ROOSEVELT	NEW MEXICO					
	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS	25133	28536	33127	30703	35017	40769
OTHER LABOR INCOME	1368	1665	2098	2184	2591	3023
PROPRIETORS INCOME	8015	21596	14715	18909	23262	25732
FARM	3912	17478	10284	13737	17321	19075
NON-FARM	4103	4118	4431	5172	5941	6657
FARM	5733	19520	12550	15954	19972	22921
NON-FARM	28783	32277	37390	35842	40898	46603
PRIVATE	15356	16811	19352	21169	24480	27778
AG. SERV., FOR., FISH., AND OTHER	540	415	395	515	573	633
MINING	206	74	360	238	915	1051
CONSTRUCTION	1223	1367	1739	1754	2066	2361
MANUFACTURING	1440	1644	1912	2092	2515	2779
NON-DURABLE GOODS	1297	1545	1805	1994	2388	2631
DURABLE GOODS	143	99	107	98	127	148
TRANSPORTATION AND PUBLIC UTILITIES	2610	2698	3117	3515	3812	4371
WHOLESALE TRADE	1268	1695	1963	2027	2238	2370
RETAIL TRADE	4230	4524	5006	5569	6151	6969
FINANCE, INSURANCE, AND REAL ESTATE	1139	1296	1415	1562	1701	1677
SERVICES	2700	3098	3445	3897	4509	5567
GOVERNMENT AND GOVERNMENT ENTERPRISES	13427	15466	18038	14673	16418	18825
FEDERAL, CIVILIAN	603	671	718	932	1016	1177
FEDERAL, MILITARY	370	342	334	323	338	537
STATE AND LOCAL	12454	14453	16986	13418	15064	17111
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK	34516	51797	49940	51796	60870	69524
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK	1538	1777	2061	2271	2559	2886
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK	32978	50020	47879	49525	58311	66638
PLUS: RESIDENCE ADJUSTMENT	2587	2697	2903	3402	3807	4080
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID	35565	52717	50782	52927	62118	70718
PLUS: DIVIDENDS, INTEREST, AND RENT	8795	10858	12082	14487	17300	19978
PLUS: TRANSFER PAYMENTS	9544	11675	13118	14237	15717	17850
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)	\$3904	75250	75982	81651	95135	108546
PER CAPITA PERSONAL INCOME (\$)	3157	4524	4607	4882	5734	6557
TOTAL POPULATION (HUNDREDS)	17076	16634	16494	16724	16590	16554

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

in Roosevelt County in 1979 stood at \$9,418 compared to the state average of \$11,658 and \$12,884 in the United States (U.S. Department of Commerce, 1981). Farm proprietor income has historically been much higher than the state average (except for the years 1974 and 1976), registering \$18,646 in 1979 in the county compared to \$15,414 in the state as a whole.

Continued dependence on agricultural activity will result in continuing fluctuations in income levels in the county. Development of other basic sectors of the region's economy could ensure some protection from potential long-term downturns in income levels due to fluctuating livestock or other agricultural prices.

#### **Dalhart (2.2.3.7)**

Location of an operating base in the Dalhart area would principally affect Dallam, Hartley, and Moore counties.

##### Dallam County (2.2.3.7.1)

Total earnings in Dallam County amounted to \$36.5 million in 1979, up from \$11.3 million in 1974 (Table 2.2.3.7-1). Earnings in the county amounted to less than one percent of total earnings in Texas. Agricultural activity (principally from livestock and grazing activities) dominates the local economy, and, as such, total earnings and income levels in the county are severely affected by irregular growth or decline in the earnings levels of this sector. This situation is most evident when analyzing the income per capita levels in the county.

Figure 2.2.3.7-1 presents personal income per capita for county residents from 1969 through 1979. Per capita income fluctuated moderately around the \$3,800 level over the years 1969-1974. Per capita income in the 1974-1979 period, while still exhibiting some cyclic behavior, has been generally, on the rise. On the average, however, per capita income over the 1969-1979 period does fall below both state and U.S. averages--\$5,215 compared to \$5,393 for the state and \$5,681 for the United States.

Less affected by irregular fluctuations in farm income, particularly farm proprietor income, are earnings per worker. Earnings (wage and salary disbursements) per worker stood at \$9,751 in 1979. Although significantly lower than the state average, \$12,771, they have not exhibited the yearly fluctuations evident in the income per capita over the 1969-1979 period (U.S. Department of Commerce, 1981).

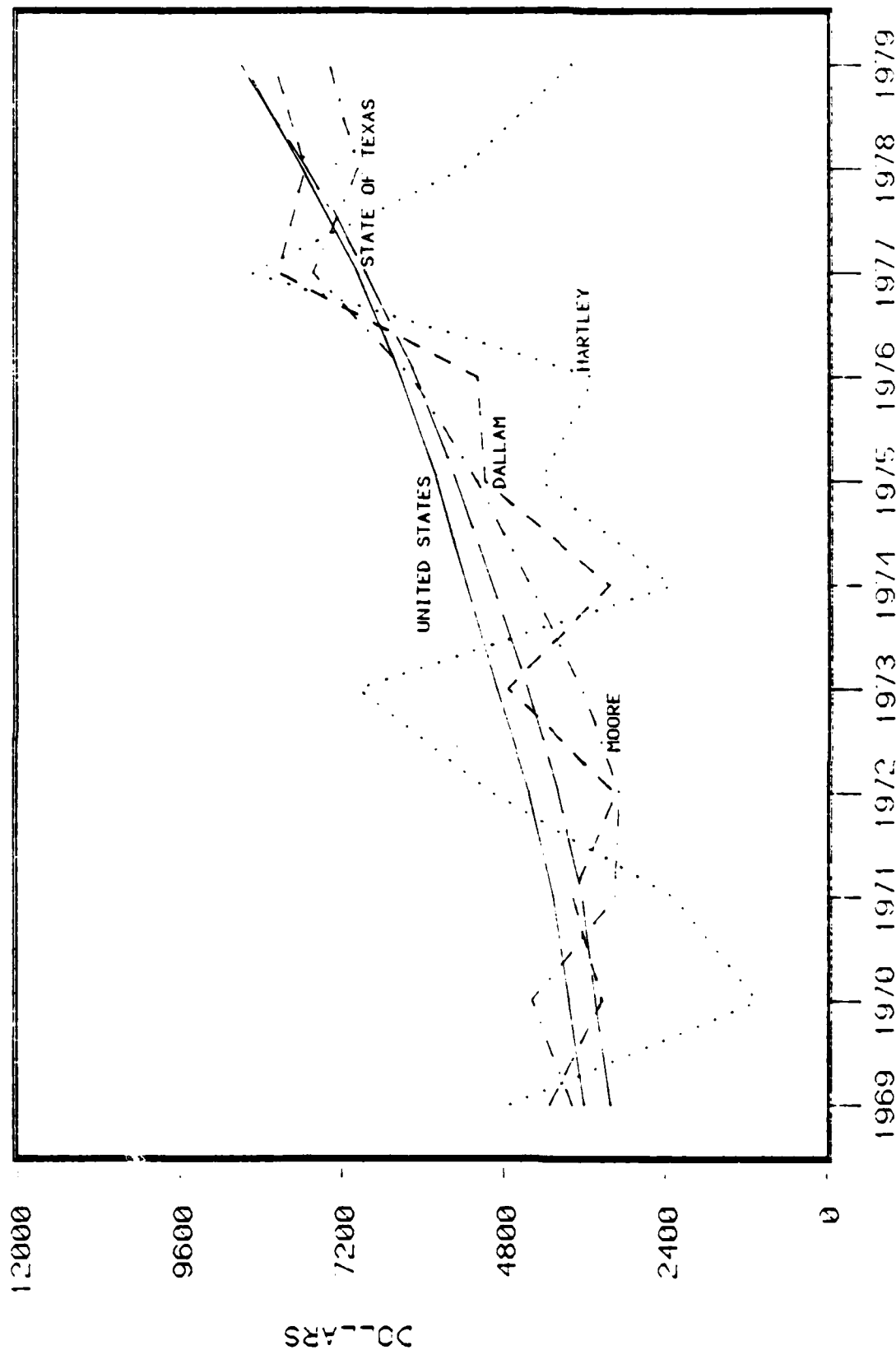
##### Hartley County (2.2.3.7.2)

Total earnings in Hartley County stood at \$2.3 million in 1979 (Table 2.2.3.7-2). Agricultural activities, principally in the form of livestock and grazing activities, dominate the local economy. Income and earnings levels in the county also exhibit irregular fluctuations. Figure 2.2.3.7-1 presents personal income per capita for Hartley County and reveals even wider variations in per capita levels than found in any of the other counties under analysis. Peak years are evident in 1973 and 1977 when income per capita was \$7,047 and \$8,607 respectively, higher than both the state and U.S. levels. On the average, however, the income per capita over the 1969-79 period was \$4,409 compared to the state and U.S. averages of

TABLE 2.2.3.7-1. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

DALLAM	TEXAS	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		14811	15624	18146	22750	25124	26854
OTHER LABOR INCOME		1008	1244	1491	2091	2527	2628
PROPRIETORS INCOME		-4554	4317	1881	15944	7868	7028
FARM		-8215	302	-2347	10544	1963	393
NON-FARM		3661	4015	4228	5400	5905	6635
FARM		-6016	2409	161	13617	5159	4083
NON-FARM		17281	18776	21357	27168	30360	32427
PRIVATE		14920	16093	18293	23618	26707	28638
AG. SERV., FOR., FISH., AND OTHER		152	162	208	212	267	512
MINING		80	35	52	4	163	431
CONSTRUCTION		1123	902	1039	1027	818	1094
MANUFACTURING		1237	1522	1498	3560	5312	3766
NON-DURABLE GOODS		1145	1430	1436	3243	5135	3257
DURABLE GOODS		92	92	62	317	177	509
TRANSPORTATION AND PUBLIC UTILITIES		2555	2749	3123	3768	4540	5358
WHOLESALE TRADE		2023	2938	3938	4360	3791	4152
RETAIL TRADE		3825	3531	3723	4646	5219	5431
FINANCE, INSURANCE, AND REAL ESTATE		1004	1374	1558	1760	2091	2466
SERVICES		2921	2880	3160	4281	4506	5428
GOVERNMENT AND GOVERNMENT ENTERPRISES		2361	2683	3058	3550	3653	3789
FEDERAL, CIVILIAN		639	758	805	843	896	930
FEDERAL, MILITARY		41	42	45	47	51	54
STATE AND LOCAL		1681	1883	2208	2660	2706	2805
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		11265	21185	21518	40785	35519	36510
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		936	1009	1160	1448	1641	1904
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		10329	20176	20358	39337	33878	34606
PLUS: RESIDENCE ADJUSTMENT		-1258	-1443	-1739	-3313	-3169	-3270
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		9071	18733	18619	36024	30709	31336
PLUS: DIVIDENDS, INTEREST, AND RENT		8216	10123	11537	13800	15843	17892
PLUS: TRANSFER PAYMENTS		3563	4260	4768	5276	5786	6519
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		20850	33116	34924	55100	52338	55747
PER CAPITA PERSONAL INCOME (\$)		3308	5155	5272	8212	7812	8267
TOTAL POPULATION (HUNDREDS)		6302	6424	6624	6710	6700	6743

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.  
 (D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.  
 SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



YEAR

Source: U.S. Dept. of Commerce, April 11, 1981

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Figure 2.2.3.7-1. Personal income per capita, 1969-1979, in current dollars, for the Dalhart AOA, Texas, and the United States.

TABLE 2.2.3.7-2. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

HALE	TEXAS	1974	1975	1976	1977	1978	1979
WAGE AND SALARY DISBURSEMENTS		78539	82691	92754	103784	117275	131220
OTHER LABOR INCOME		5924	6918	8050	9437	10979	12504
PROPRIETORS INCOME		33064	42106	49822	63515	25500	56426
FARM		19384	27696	35568	47438	8264	36981
NON-FARM		13680	14410	14254	16077	17236	19445
FARM		25009	33035	41974	55344	16460	46470
NON-FARM		92518	98680	108652	121392	137294	153680
PRIVATE		78599	83676	91628	102371	116487	130771
AG SERV. FOR FISH, AND OTHER		1663	2022	2107	2465	5067	6679
MINING		524	434	894	644	783	897
CONSTRUCTION		4353	4191	6023	6316	6997	8308
MANUFACTURING		18252	19201	20252	23478	27038	29777
NON-DURABLE GOODS		13733	14707	15082	17316	20564	21898
DURABLE GOODS		4519	4494	5170	6162	6474	7879
TRANSPORTATION AND PUBLIC UTILITIES		7970	7733	7897	9304	10477	12574
WHOLESALE TRADE		9971	12467	14724	16836	17975	18143
RETAIL TRADE		16491	15993	16876	18272	20739	23259
FINANCE, INSURANCE, AND REAL ESTATE		4500	4569	5208	6234	6849	7558
SERVICES		14875	17066	17647	18822	20562	23576
GOVERNMENT AND GOVERNMENT ENTERPRISES		13919	15004	17024	19021	20807	22909
FEDERAL, CIVILIAN		1901	1952	2151	2326	2543	2707
FEDERAL, MILITARY		239	252	258	271	288	295
STATE AND LOCAL		11779	12800	14615	16424	17976	19907
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		117527	131715	150626	176736	193754	200150
LESS PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		4859	5332	5752	6396	7322	8452
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		112668	126383	144874	170340	146432	191698
PLUS RESIDENCE ADJUSTMENT		819	1193	1203	1541	1677	1698
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		113487	127576	146077	171881	148109	193396
PLUS DIVIDENDS, INTEREST, AND RENT		31375	35936	40090	46958	53715	60506
PLUS TRANSFER PAYMENTS		16909	20381	22618	24601	26885	30791
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		161771	183893	208785	243440	228709	284693
PER CAPITA PERSONAL INCOME (\$)		4614	5204	5914	6901	6490	8019
TOTAL POPULATION (HUNDREDS)		35062	35338	35303	35275	35238	35501

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981

\$5,393 and \$5,681, respectively. Much of the yearly variation is due to fluctuating farm proprietors income levels over the 1969-79 period.

Earnings per worker are less affected by fluctuating farm proprietor income levels and have exhibited steady growth over the years. Earnings (wage and salary disbursements) per worker stood at \$7,895 in 1979 (U.S. Department of Commerce, Bureau of Economic Analysis, April 1981). Although this is significantly lower than the state average (\$12,771), they have not exhibited the yearly fluctuations evident in the income per capita rates over the 1969-79 period.

#### Moore County (2.2.3.7.3)

Total earnings in Moore County amounted to \$8.3 million in 1979, up from \$4.5 million in 1974 (Table 2.2.3.7-3). This represents a small fraction of total state earnings throughout the 1974-1979 period. Similar to adjacent counties, agricultural activities play an important role in the county's economy. The area also has a relatively stronger manufacturing base which accounted for over one-third of total county earnings in 1979. Income and earnings levels do not fluctuate as widely as in Dallam and Hartley counties. Figure 2.2.3.7-1 presents personal income per capita for Moore County for the 1969-1979 period. Although sharp drops over the 1970-1972 period brought per capita income levels down to \$3,149, about three-quarters of the state levels in 1972, steady increases through 1977 resulted in per capita income of \$7,698, about 11.4 percent greater than the state level. Per capita income has remained slightly below the level in the 1978-1979 period.

With its relatively stronger manufacturing base, earnings (wage and salary disbursements) per worker in the county are comparable to statewide levels - \$12,593 compared to \$12,771 statewide in 1979 (U.S. Department of Commerce, 1981). Continued growth in manufacturing and other basic sectors of the economy would ensure residents of the county relatively strong income levels in the future and can serve as a buffer from fluctuating farm income levels.



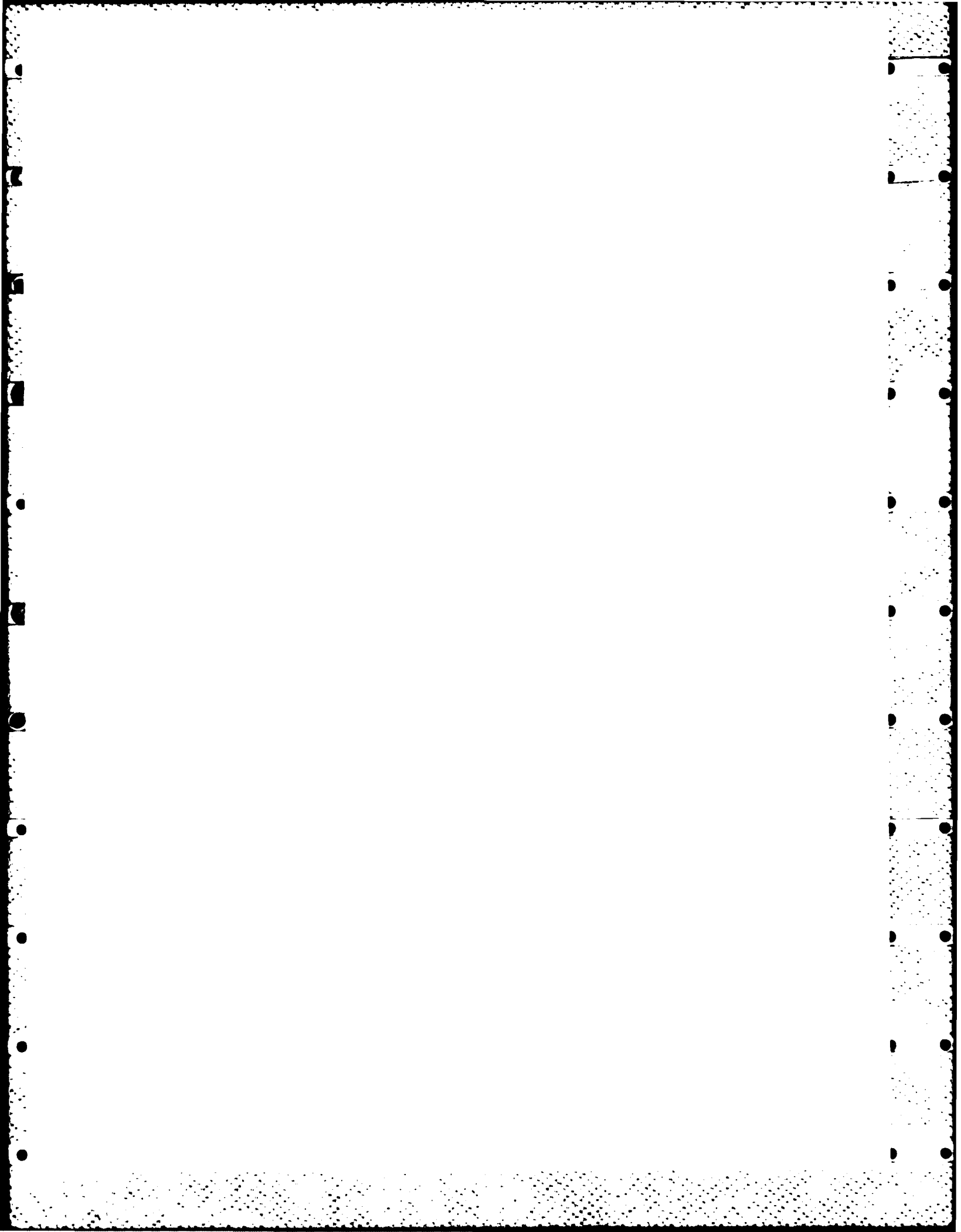
TABLE 2.2.3.7-3. PERSONAL INCOME BY MAJOR SOURCES AND TOTAL LABOR AND PROPRIETORS INCOME BY TYPE AND INDUSTRY

MOORE	TEXAS	1974	1975	1976	1977	1978	1979
		----	----	----	----	----	----
WAGE AND SALARY DISBURSEMENTS		42200	44577	57822	67839	77803	87682
OTHER LABOR INCOME		4361	4955	6662	8511	9984	11511
PROPRIETORS INCOME		2883	10789	14137	21969	-289	-3315
FARM		-2777	4900	7672	14176	-8823	-12849
NON-FARM		5660	5889	6465	7793	8534	9534
FARM		-52	7500	10775	17998	-4854	-8261
NON-FARM		49496	52821	67846	80321	92352	104139
PRIVATE		43470	46259	60494	71769	82775	93413
AG SERV. FOR.. FISH.. AND OTHER		721	304	350	299	550	582
MINING		5591	6456	7428	5176	6138	6776
CONSTRUCTION		5189	5033	7252	4764	7051	8815
MANUFACTURING		11294	11142	18426	26448	31127	34629
NON-DURABLE GOODS		10653	10526	18030	26147	30421	33896
DURABLE GOODS		641	616	396	301	706	733
TRANSPORTATION AND PUBLIC UTILITIES		6503	7269	8190	12624	14265	16425
WHOLESALE TRADE		2113	3014	3702	3756	4348	4944
RETAIL TRADE		5593	5930	6216	7631	8301	9591
FINANCE, INSURANCE, AND REAL ESTATE		1173	1298	1583	2195	2145	2270
SERVICES		5293	5813	7347	8876	9347	9977
GOVERNMENT AND GOVERNMENT ENTERPRISES		6026	6562	7352	8552	9577	10726
FEDERAL, CIVILIAN		1275	1389	1434	1712	2031	2301
FEDERAL, MILITARY		84	93	98	107	116	120
STATE AND LOCAL		4667	5080	5820	6733	7430	8305
TOT. LABOR AND PROPRIETORS INCOME BY PL. OF WORK		49444	60321	78621	98319	87498	95878
LESS: PERS. CONTRIB. FOR SOC. INSURANCE BY P. OF WK		2561	2769	3420	3977	4642	5399
NET LABOR AND PROPRIETORS INCOME BY PLACE OF WORK		46883	57552	75201	94342	82856	90479
PLUS: RESIDENCE ADJUSTMENT		-1757	-1741	-5472	-5671	-6914	-7922
NET LABOR AND PROPRIETORS INCOME BY PLACE OF RESID		45126	55811	69729	88671	75942	82557
PLUS: DIVIDENDS, INTEREST, AND RENT		10084	11910	14732	18768	21459	24152
PLUS: TRANSFER PAYMENTS		4658	5777	6455	7417	8546	9659
PERSONAL INCOME BY PLACE OF RESIDENCE (\$1000.)		59868	73498	90916	114856	105947	116368
PER CAPITA PERSONAL INCOME (\$)		4482	5272	6245	7698	7027	7453
TOTAL POPULATION (HUNDREDS)		13357	13940	14558	14920	15078	15614

(L) BETWEEN -49000 AND +49000, AND NOT EQUAL TO ZERO. DATA INCLUDED IN TOTALS.

(D) NOT SHOWN TO AVOID DISCLOSURE OF CONFIDENTIAL INFORMATION. DATA INCLUDED IN TOTALS.

SOURCE: U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS, REGIONAL ECONOMIC INFORMATION SYSTEM, APRIL, 1981



### 3.0 ENVIRONMENTAL EFFECTS

#### 3.1 EMPLOYMENT AND LABOR FORCE

##### NEVADA/UTAH REGION OF INFLUENCE (3.1.1)

This section is presented in the Employment and Labor Force section of Chapter 4 in the FEIS.

##### TEXAS/NEW MEXICO REGION OF INFLUENCE (3.1.2)

This section is presented in the Employment and Labor Force section of Chapter 4 in the FEIS.

##### ANALYSIS OF OB AREAS (3.1.3)

###### Beryl (3.1.3.1)

Beryl would be selected as an operating base location in three of the nine project configurations, Alternatives 1, 3, and 4. Base-associated activity represents the primary source of M-X-related employment. This would include spillover employment impacts from other counties, notably Beaver. No DDA facilities are located in Iron County.

###### Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.1.1)

Employment effects primarily result from the project's demand for construction and operations labor. Tables 3.1.3.1-1 and 3.1.3.1-2 present direct, indirect, and total labor requirements for Alternatives 1 and 3, two of the three M-X alternatives with a proposed base near Beryl. Under Alternatives 3 and 4, Beryl would be the site for a first operating base. A second operating base would be located at Beryl under Alternative 1. The impacts of Alternatives 3 and 4 would be virtually the same, so only the projected impacts for Alternative 3 are shown here. Alternative 1 would be substantially less. Other detailed supporting data for Iron County impacts are presented in ETR-2E.

Table 3.1.3.1-2 summarizes Iron County employment for Alternative 3 and indicates that construction of the base would begin in 1982 and last for 6 years, peaking at 2,900 workers in 1983. Compared to baseline trend-growth employment projections developed by the Bureau of Economic and Business Research, University of Utah, this peak demand figure would be almost six times as large as the projected county employment of 500 persons in the contract construction industry (University of Utah, 1980b). Employment demand of this magnitude would induce significant changes in the county's building trades industry, creating shortages of skilled workers, wage escalation, and large-scale in-migration of workers into Iron County. Operation of the base would begin in 1983, with full base staffing by 1989. A first operating base (Alternatives 3 and 4) requires a long-run direct workforce level of 7,700 persons, of which 84 percent would be military. Under Alternative 1, where a second operating base would be sited at Beryl, total direct labor required would be less, particularly over the initial buildup phase (Table 3.1.3.1-1).

Table 3.1.3.1-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN IRON

ALTERNATIVE 1: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT BERYL, UT (IRON CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
TOTAL DIRECT	0	0	179	1908	2402	3895	5215	5600	5600	5600	5600	5600	5600
INDIRECT	8	38	593	1976	2957	3780	3720	3182	2450	1368	1103	1095	1095
TOTAL	8	38	772	3884	5359	7675	8935	8782	8050	6968	6703	6695	6695

SOURCE: HDR SCIENCES, 16-SEP-81

CT1167

Table 3.1.3.1-2.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN IRON

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT BERYL, UT (IRON CO.)  
 BASE II AT ELY, NV (WHITE PINE CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	1392	2936	2762	2618	1565	1052	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	50	200	500	900	1450	1450	1450	1450	350	0	0	0	0
OPERATIONS													
OFFICERS	0	10	34	224	487	610	610	610	610	610	610	610	610
ENLISTED PERSONNEL	0	27	148	1907	4342	5900	5900	5900	5900	5900	5900	5900	5900
CIVILIANS	0	2	52	480	848	1212	1212	1220	1220	1220	1220	1220	1220
TOTAL DIRECT	1442	3175	3496	6129	8692	10224	9172	9180	8080	7730	7730	7730	7730
INDIRECT	1075	2757	3906	5381	5543	5031	3939	2408	1735	1549	1521	1520	1520
TOTAL	2517	5932	7402	11510	14235	15255	13111	11588	9815	9279	9251	9250	9250

SOURCE: HDR SCIENCES, 16-SEP-81

CT1169

Large numbers of jobs indirectly related to M-X would be created in Iron County. The principal source of expansion would be the spending of project payrolls earned by direct employees. There would also be base procurement of goods and services from area suppliers, who in turn would expand employment to meet the increased demand. Project-related investment by governments and private businesses would create secondary jobs. Table 3.1.3.1-2 indicates that employment indirectly related to M-X would peak at 5,500 jobs in 1986 and decline thereafter, reaching about 1,500 jobs, beginning in 1991.

Table 3.1.3.1-2 indicates that total M-X-related employment by place of work in the county is forecast to be as much as 15,300 jobs in 1987, 175 percent of the trend-growth employment projection of 8,800 jobs in that year. When adjusted for workers who reside in other counties (Lincoln, Beaver, and Washington), this figure of 15,300 drops to 13,100, almost 150 percent of trend-growth employment projections (Tables 3.1.3.1-3 and 3.1.3.1-4). Over the long-run, the M-X-induced change in employment by place of employment for Alternatives 3 and 4 would equal 9,300 jobs, or 7,900 workers by place of residence. This latter figure represents an increase of almost 80 percent above baseline employment projected for 1994 in the county. No large additional projects in Iron County appear likely during the same time period.

Employment in Iron County traditionally has been dominated by government, agriculture, and services. The county has grown at rates comparable to those of the western United States as a whole, posting a 3.1 percent annual employment growth rate over the 1974-1979 period. With either Alternative 1, 3, or 4, the county economy would experience boom-type growth, given the projected rapid build-up of M-X employment. Cedar City currently is the county's leading population center, though Beryl would expand greatly as a result of M-X. These and other communities would experience shortages of skilled labor, general wage escalation, and large-scale in-migration of project workers. Over the initial phases of the project this in-migration would comprise construction, assembly, and checkout workers, while over the long run much of the employment growth would be military personnel.

Growth of ancillary industries to supply consumption demands and base-support needs would change the county's economic structure. Increased numbers of retail and service establishments (hotels, restaurants, clothing stores, and supermarkets, for example) would characterize this economic growth. After the peak of project construction, assembly, and checkout activity had passed, local wage and price pressures would subside. The county would, however, experience long-term increases in many prices--particularly in real estate prices--and incomes, as long as the base remained in operation.

Spillover impacts from base operations into Beaver and Washington counties in Utah and Lincoln County in Nevada would induce long run economic growth in these counties as well. This growth is the outcome of supplier industries expanding to meet new demand for goods and services of base employees. Tables 3.1.3.1-5 through 3.1.3.1-7 present projections of employment and labor force by place of residence for Beaver, Lincoln, and Washington counties, respectively. These projections are shown only for the alternative having the largest employment impact in each case. In Beaver and Lincoln counties, the additional stimulus from DDA construction would create peak employment impacts of as much as 2,800 jobs in Beaver and 7,000 in Lincoln, under Alternative 4 (See ETR-2B and ETR-2G).

Table 3.1.3.1-3.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN IRON

ALTERNATIVE 1: FULL DEPLOYMENT - NEVADA/UTAH (L)  
BASE I AT COVOTE SPRING, NV (CLARK CO.)  
BASE II AT BERYL, UT (IRON CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	18410	18993	19649	20348	20861	21346	21851	22369	22895	23314	23747	24164	24556
LF PARTICIPATION RATE	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
LABOR FORCE	8100	8357	8646	8953	9179	9392	9614	9842	10074	10258	10449	10632	10805
EMPLOYMENT: LF CONCEPT	7622	7864	8135	8425	8637	8838	9047	9262	9479	9653	9832	10005	10167
UNEMPLOYMENT	478	493	511	528	542	554	567	580	595	605	617	627	638
UNEMPLOYMENT RATE	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
RESIDENTIAL LF	154	159	164	170	174	178	183	187	191	195	199	202	205
--FOR CONSTRUCTION	46	48	49	51	52	54	55	56	57	58	60	61	62
--FOR OPERATIONS	31	32	33	34	35	36	37	37	38	39	40	40	41
--FOR IND. EMPLOYMENT	77	79	82	85	87	89	91	94	96	97	99	101	103
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	11	44	92	181	110	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	3	3	80	33	0	0	0	0	0	0	0
BASE CONSTRUCTION	0	0	116	1220	1401	1234	467	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	33	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	25	155	1427	3126	3880	3880	3880	3880	3880	3880
OPERATIONS, CIVILIAN	0	0	0	1	45	187	573	725	725	725	725	725	725
INDIRECT EMPLOYMENT	8	38	593	1976	2957	3780	3720	3182	2450	1368	1103	1095	1095
TOTAL	19	82	804	3406	4748	6693	7886	7787	7055	5973	5707	5700	5700
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	0	173	1468	1586	1283	448	0	0	0	0	0	0
ASS. AND CKOUT LF	0	0	3	3	80	65	0	0	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	10	151	537	687	686	686	685	684	683
SECONDARY	0	0	55	470	595	1145	1834	2114	2114	2113	2113	2113	2112
ADDITIONAL INDIRECT	0	0	461	1464	2331	2674	2016	1235	501	0	0	0	0
TOTAL LF	0	0	692	3404	4602	5319	4834	4036	3301	2799	2798	2797	2796
<b>PROJECTIONS WITH M-X</b>													
POPULATION	18410	18993	21565	28844	33097	37704	39207	38339	36419	35167	35598	36013	36403
CIV. LABOR FORCE	8100	8357	9337	12357	13781	14712	14449	13879	13375	13057	13246	13429	13600
EMPLOYMENT: LF CONCEPT	7642	7946	8940	11806	13230	14104	13807	13168	12654	11746	11659	11824	11986
UNEMPLOYMENT	458	411	397	551	551	608	642	711	721	1311	1587	1605	1614
UNEMPLOYMENT RATE	5.70	4.90	4.30	4.50	4.00	4.10	4.40	5.10	5.40	10.00	12.00	11.90	11.90

SOURCE: HDR SCIENCES, 16-SEP-81

CT1149

Table 3.1.3.1-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN IRON

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH (L)  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	18410	18993	19649	20348	20861	21346	21851	22369	22895	23314	23747	24164	24556
LF PARTICIPATION RATE	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
LABOR FORCE	8100	8357	8646	8953	9179	9392	9614	9842	10074	10258	10449	10632	10805
EMPLOYMENT: LF CONCEPT	7622	7864	8135	8425	8637	8838	9047	9262	9479	9653	9832	10005	10167
UNEMPLOYMENT	478	493	511	528	542	554	567	580	595	605	617	627	638
UNEMPLOYMENT RATE	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
RESIDENTIAL LF	154	159	164	170	174	178	183	187	191	195	199	202	205
--FOR CONSTRUCTION	46	48	49	51	52	54	55	56	57	58	60	61	62
--FOR OPERATIONS	31	32	33	34	35	36	37	37	38	39	40	41	40
--FOR IND. EMPLOYMENT	77	79	82	85	87	89	91	94	96	97	99	101	103
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	39	68	33	182	117	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	3	5	100	33	0	0	0	0	0	0	0
BASE CONSTRUCTION	905	1908	1795	1702	1017	684	0	0	0	0	0	0	0
BASE ASS. & CKOUT	33	130	325	585	942	942	942	942	227	5534	5534	5534	5534
OPERATIONS, MILITARY	0	31	155	1811	4105	5534	5534	5534	5534	5534	5534	5534	5534
OPERATIONS, CIVILIAN	0	1	36	336	594	848	848	854	854	854	854	854	854
INDIRECT EMPLOYMENT	1075	2757	3906	5381	5543	5031	3939	2408	1735	1549	1521	1520	1520
TOTAL	2051	4896	6254	10002	12417	13073	11263	9738	8350	7937	7909	7908	7908
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	976	2096	1934	1992	1175	685	0	0	0	0	0	0	0
ASS. AND CKOUT LF	33	130	328	590	1043	976	942	942	227	5534	5534	5534	5534
CIVILIAN OPS	0	0	4	302	559	813	812	817	816	815	814	814	813
SECONDARY	315	709	778	1783	2841	3446	3221	3224	3000	2929	2928	2928	2928
ADDITIONAL INDIRECT	712	2033	3120	3706	2945	1907	1016	0	0	0	0	0	0
TOTAL LF	2035	4968	6163	8374	8562	7826	5992	4983	4043	3744	3743	3742	3741
<b>PROJECTIONS WITH M-X</b>													
POPULATION	23293	31395	36121	44555	48213	48350	44096	41243	39929	39762	40193	40608	40998
CIV. LABOR FORCE	10135	13325	14808	17327	17741	17218	15606	14825	14117	14002	14191	14374	14545
EMPLOYMENT: LF CONCEPT	9674	12728	14235	16616	16950	16378	14777	13467	12296	12056	12207	12379	12542
UNEMPLOYMENT	461	597	573	711	791	840	829	1358	1821	1946	1984	1995	2003
UNEMPLOYMENT RATE	4.60	4.50	3.90	4.10	4.50	4.90	5.30	9.20	12.90	13.90	14.00	13.90	13.80

SOURCE: HDR SCIENCES, 16-SEP-81

CT1151



Table 3.1.3.1-5.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS.  
WITH AND WITHOUT M-X, IN BEAVER

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6548	8663	9835	10993	11983	10023	9715	9814	9965	10130	10291	10455	10566
LF PARTICIPATION RATE	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80
LABOR FORCE	2934	3881	4406	4925	5368	4490	4352	4397	4464	4538	4610	4684	4734
EMPLOYMENT-LF CONCEPT	2749	3637	4128	4615	5030	4207	4078	4120	4183	4252	4320	4389	4435
UNEMPLOYMENT	185	244	278	310	338	283	274	277	281	286	290	295	299
UNEMPLOYMENT RATE	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
RESIDENTIAL LF	67	89	101	113	123	103	100	101	103	104	106	108	109
--FOR CONSTRUCTION	20	27	30	34	37	31	30	30	31	31	32	32	33
--FOR OPERATIONS	13	18	20	23	25	21	20	20	21	21	21	22	22
--FOR IND. EMPLOYMENT	34	45	51	57	62	52	50	51	51	52	53	54	54
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	346	629	382	1856	1098	125	170	12	0	0	0	0	0
SHELTER ASS. & CKOUT	1	10	36	145	1020	269	50	39	0	0	0	0	0
BASE CONSTRUCTION	70	147	138	131	78	53	0	0	0	0	0	0	0
BASE ASS. & CKOUT	3	10	25	45	73	73	73	73	18	0	0	0	0
OPERATIONS, MILITARY	0	2	9	107	241	326	326	326	326	326	326	326	326
OPERATIONS, CIVILIAN	0	0	3	24	42	61	61	61	61	61	61	61	61
INDIRECT EMPLOYMENT	157	361	367	824	993	657	471	393	316	284	280	279	279
TOTAL	577	1158	960	3131	3546	1562	1149	902	720	671	666	666	666
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	430	814	532	2123	1238	159	152	0	0	0	0	0	0
ASS. AND CKOUT LF	4	20	61	190	1093	342	122	111	18	0	0	0	0
CIVILIAN OPS	0	0	0	1	18	40	41	41	40	40	40	39	39
SECONDARY	135	261	189	770	846	324	254	203	174	168	168	168	168
ADDITIONAL INDIRECT	0	79	144	68	166	316	195	163	113	85	80	79	78
TOTAL LF	569	1173	927	3152	3360	1181	765	518	345	293	287	286	285
<b>PROJECTIONS WITH M-X</b>													
POPULATION	7516	10755	11572	16577	18465	13090	11807	11504	11318	11359	11501	11661	11770
CIV. LABOR FORCE	3503	5054	5333	8077	8729	5672	5117	4915	4809	4832	4898	4970	5019
EMPLOYMENT-LF CONCEPT	3326	4793	5079	7639	8334	5444	4902	4696	4578	4598	4661	4729	4776
UNEMPLOYMENT	177	261	254	438	395	228	215	219	231	234	237	241	247
UNEMPLOYMENT RATE	5.10	5.20	4.80	5.40	4.50	4.00	4.20	4.40	4.80	4.80	4.80	4.80	4.80

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.1-6.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN LINCOLN

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	3922	4042	4163	4292	4416	4546	4686	4825	4965	5113	5274	5425	5595
LF PARTICIPATION RATE	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50
LABOR FORCE	1785	1839	1894	1953	2009	2068	2132	2195	2259	2326	2400	2468	2546
EMPLOYMENT-LF CONCEP	1690	1742	1794	1849	1903	1959	2019	2079	2139	2203	2272	2338	2411
UNEMPLOYMENT	95	97	100	104	106	109	113	116	120	123	128	130	135
UNEMPLOYMENT RATE	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30
RESIDENTIAL LF	23	24	25	25	26	27	28	29	29	30	31	32	33
--FOR CONSTRUCTION	7	7	7	8	8	8	8	9	9	9	9	10	10
--FOR OPERATIONS	5	5	5	5	5	5	6	6	6	6	6	6	7
--FOR IND. EMPLOYMENT	12	12	12	13	13	13	14	14	15	15	16	16	17
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	39	495	1025	2195	1931	790	1445	1352	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	36	55	666	198	77	1036	0	0	0	0	0
BASE CONSTRUCTION	209	440	414	393	235	158	0	0	0	0	0	0	0
BASE ASS. & CKOUT	8	30	75	135	218	218	218	218	53	0	0	0	0
OPERATIONS, MILITARY	0	2	9	107	241	326	326	326	326	326	326	326	326
OPERATIONS, CIVILIAN	0	0	8	72	127	182	182	183	183	183	183	183	183
INDIRECT EMPLOYMENT	82	351	634	1161	1425	1002	1079	1406	510	220	204	204	204
TOTAL	338	1318	2202	4118	4843	2872	3326	4519	1071	729	713	713	713
<b>M-X LF INMIGRATION</b>													
CONSTRUCTION LF	262	1009	1557	2805	2346	1021	1561	1460	0	0	0	0	0
ASS. AND CKOUT LF	8	30	111	190	883	415	295	1253	53	0	0	0	0
CIVILIAN OPS	0	0	3	67	122	176	176	177	177	177	177	177	176
SECONDARY	84	325	526	1018	1180	688	818	1086	256	240	240	239	239
ADDITIONAL INDIRECT	0	43	143	225	342	369	326	409	268	0	0	0	0
TOTAL LF	353	1407	2340	4304	4873	2669	3177	4386	754	417	416	416	416
<b>PROJECTIONS WITH M-X</b>													
POPULATION	4407	6265	8139	11891	13430	9984	11186	13663	7282	6442	6602	6753	6922
CIV LABOR FORCE	2138	3246	4234	6257	6883	4738	5309	6581	3013	2743	2816	2884	2961
EMPLOYMENT-LF CONCEP	2028	3058	3986	5861	6504	4506	5019	6273	2885	2607	2660	2725	2798
UNEMPLOYMENT	110	188	248	396	379	232	290	308	128	136	156	159	163
UNEMPLOYMENT RATE	5.20	5.80	5.90	6.30	5.50	4.90	5.50	4.70	4.30	5.00	5.50	5.50	5.50

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.1-7.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN WASHINGTON

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASLINE</b>													
POPULATION	24046	25055	26105	27200	27948	28716	29505	30317	31150	31793	32449	33119	33802
LF PARTICIPATION RATE	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70	37.70
LABOR FORCE	9065	9446	9842	10254	10536	10826	11123	11430	11744	11986	12233	12486	12743
EMPLOYMENT: LF CONCEPT	8594	8955	9330	9721	9989	10263	10545	10835	11133	11363	11597	11837	12081
UNEMPLOYMENT	471	491	512	533	547	563	578	595	611	623	636	649	662
UNEMPLOYMENT RATE	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20
RESIDENTIAL LF	109	113	118	123	126	130	133	137	141	144	147	150	153
--FOR CONSTRUCTION	33	34	35	37	38	39	40	41	42	43	44	45	46
--FOR OPERATIONS	22	23	24	25	25	26	27	27	28	29	29	30	31
--FOR IND. EMPLOYMENT	54	57	59	62	63	65	67	69	70	72	73	75	76
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
BASE CONSTRUCTION	209	440	414	393	235	158	0	0	0	0	0	0	0
BASE ASS. & CKOUT	8	30	75	135	218	218	218	218	53	0	0	0	0
OPERATIONS, MILITARY	0	2	9	107	241	326	326	326	326	326	326	326	326
OPERATIONS, CIVILIAN	0	0	5	48	85	121	121	122	122	122	122	122	122
INDIRECT EMPLOYMENT	78	207	277	459	596	624	539	481	401	365	361	361	361
TOTAL	294	680	781	1141	1374	1446	1203	1146	901	814	809	809	809
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	191	442	412	387	214	129	0	0	0	0	0	0	0
ASS. AND CKOUT LF	8	30	75	135	218	218	218	218	53	0	0	0	0
CIVILIAN OPS	0	0	0	23	60	95	95	95	94	93	93	92	91
SECONDARY	62	148	156	223	275	305	264	254	213	196	196	195	195
ADDITIONAL INDIRECT	0	16	76	196	287	287	237	178	142	122	116	114	113
TOTAL LF	261	636	719	965	1053	1034	814	754	501	411	404	402	400
<b>PROJECTIONS WITH M-X</b>													
POPULATION	24404	25962	27259	29131	30464	31395	31784	32399	32815	33293	33927	34591	35268
CIV. LABOR FORCE	9326	10081	10561	11219	11589	11860	11937	12184	12245	12397	12637	12888	13143
EMPLOYMENT: LF CONCEPT	8888	9632	10102	10756	11121	11383	11422	11656	11708	11851	12081	12320	12564
UNEMPLOYMENT	438	449	459	463	468	477	515	528	537	546	556	568	579
UNEMPLOYMENT RATE	4.70	4.50	4.30	4.10	4.00	4.00	4.30	4.30	4.40	4.40	4.40	4.40	4.40

SOURCE: HDR SCIENCES, 16-SEP-81

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Effects under Alternative 1 would be about the same magnitude, though the impacts of Alternative 3 would be less. Adjusted for residence, peak employment of 7,000 in 1985 in Lincoln County would increase to 7,700 jobs, more than four times trend-growth employment in that year. Peak employment by place of residences in Beaver County would equal 3,300 in 1986 and would be over one and one-half times trend-growth employment. DDA construction would decline after 5 years, while long-term employment by place of residence of 700 workers in Beaver County (Alternatives 3 and 4) and 1,100 jobs in Lincoln County (Alternatives 1 and 4) would continue. This would be particularly important in Lincoln County, with a long run employment increase still projected at 45 percent of trend-growth employment in 1994.

DDA facilities are not forecast to impact Washington County, though spillover impacts could be as large as 600 jobs under Alternatives 3 and 4 over the 1986-1988 period. This peak increases to over 1,400 jobs when adjusting employment to place of residence, or about 14 percent of trend growth employment in 1987. Alternative 1 impacts would be much less. Long run impacts are comparable among the 3 alternatives and indicate that about 900 additional workers (by place of residence), or 7 percent of the county's 1994 trend-growth baseline, would be employed.

#### Labor Force Effects (3.1.3.1.2)

Markets for skilled construction labor, e.g., ironworkers and operating engineers, could be very tight during peak construction activity, leading to significant escalation of wages for these construction crafts. These labor shortages would extend to other locations and occupations as more mobile workers seek relatively higher M-X wages. With a relatively small local labor force, significant in-migration of additional workers would result. Labor force in-migration estimates are particularly important because they are the key determinant of population in-migration. Population changes, in turn, imply changes in the demand for community services, housing, and infrastructure, which are of critical importance to local policymakers and planners.

For Alternative 3, for example (Table 3.1.3.1-4), total civilian M-X-related employment in Iron County peaks at 13,100 jobs in 1987. In the same year, the county's available resident labor force is projected to equal about 200 persons assuming trend-growth conditions. This estimate is based on the projected unemployed labor force, assuming a continuation of historical unemployment at 5.9 percent, a figure equal to the county's 1975-1980 average rate of unemployment. An estimate of the level of unemployment--4 percent--even under tight labor market conditions is deducted from this available labor force. This available resident labor force also is disaggregated by employment type, construction, operations, or indirect employment.

The labor in-migration estimates have been calculated by comparison of the projected available labor force in Iron County with the M-X demand for labor. They represent cumulative labor in-migration into the county, which in 1987 is forecast to equal 8,600 persons under Alternative 3. Peak in-migration for Alternatives 1 and 4 would be less. Table 3.1.3.1-4 indicates a decline in civilian labor force impacts after 1987, reflecting worker out-migration as job opportunities in the county diminish. Iron County's total civilian labor force with M-X is projected to decline from 17,700 persons in 1986 to 14,000 in 1991. Alternative 4 would have very

similar long run impacts, while Alternative 1 would have much lower civilian in-migration estimates over the long-term in relative terms.

Subsequent to peak in-migration, local labor markets would become more slack. Unemployment rates would rise, labor force participation rates could fall, and the induced rise in some wages, e.g., construction workers, would diminish.

Estimates of labor in-migration from DDA construction and base-related employment are presented in Table 3.1.3.1-5 for Beaver County, in Table 3.1.3.1-6 for Lincoln County, and in Table 3.1.3.1-7 for Washington County. Additional supporting data are available in ETRs 2B, 2G, and 2K. Only in the case of Beaver County is trend-growth different from high-growth employment, a result of the predicted growth in molybdenum mining, alunite mining and processing, and geothermal power development. Of the three counties, Lincoln County would be most heavily impacted, with cumulative civilian labor in-migration peaking at 8,000 persons in 1985 (Table 3.1.3.1-6). This figure, largely due to shelter construction, is over 4 times the county's baseline labor force of 2,000 persons in 1985. Civilian labor out-migration occurs after 1985 in Lincoln County under Alternative 4, as only base operations personnel and indirect workers are required. Table 3.1.3.1-6 indicates that total or cumulative civilian in-migration stabilizes at about 600 persons, a figure almost 25 percent of the county's baseline labor force of 2,500 persons in 1994. Long run impacts in Lincoln County under Alternatives 1 and 3 would be slightly less.

Peak civilian labor in-migration in Beaver County could be as large as 3,400 persons in 1985 under Alternative 3. Table 3.1.3.1-5 indicates that with an available labor force of only 50 persons in that year, nearly all employment would be met by in-migration. (Data in ETR-2B indicate the high-growth baseline would not change this large in-migration figure. The available labor force would be larger, but still would be insignificant relative to M-X demand). Cumulative in-migration under Alternatives 1, 3, and 4 would decline after 1986, then stabilize in 1994 at about 300 persons, 13 percent of the county's baseline labor force in 1994.

Civilian labor impacts in Washington County with Alternative 3 (Table 3.1.3.1-7) result solely from base construction and operation, and from expansion of supplier industries. Peak in-migration figures under Alternative 4 would be almost identical to Alternative 3 but would be about halved with Alternative 1. Over the long run, cumulative civilian labor in-migration would be about 400 persons under all three alternatives, only 3 percent of Washington County's baseline labor force of 12,700 in 1994.

### **Coyote Spring (3.1.3.2)**

#### **Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.2.1)**

Tables 3.1.3.2-1 and 3.1.3.2-2 present statistics of direct labor requirements for the Proposed Action and Alternative 4, two of the project options which would site a base in Clark County. The Coyote Spring Valley location would be a first operating base under the Proposed Action and Alternatives 1, 2, and 8; hence, the timing and magnitude of direct labor requirements in the county from any of these options would be identical. Construction of the base would begin in 1982 and last 6

Table 3.1.3.2-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN CLARK

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT MILFORD, UT (BEAVER CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	280	500	600	300	200	200	200	200	100	0	0	0	0
BASE													
CONSTRUCTION	1392	2936	2762	2618	1565	1052	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	50	200	500	900	1250	1250	1250	1250	250	0	0	0	0
OPERATIONS													
OFFICERS	0	10	34	224	487	610	610	610	610	610	610	610	610
ENLISTED PERSONNEL	0	27	148	1907	4342	5900	5900	5900	5900	5900	5900	5900	5900
CIVILIANS	0	2	52	480	848	1212	1212	1220	1220	1220	1220	1220	1220
TOTAL DIRECT	1722	3675	4096	6429	8692	10224	9172	9180	8080	7730	7730	7730	7730
INDIRECT	2016	5285	7942	11692	13064	12495	10018	6825	4784	4265	4222	4221	4221
TOTAL	3738	8960	12038	18121	21756	22719	19190	16005	12864	11995	11952	11951	11951

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.2-2.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN CLARK

ALTERNATIVE 4: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT BERYL, UT (IRON CO.)  
 BASE II AT COYOTE SPRING, NV (CLARK CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	280	500	600	300	200	200	200	200	100	0	0	0	0
BASE													
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
TOTAL DIRECT	280	500	779	2208	2602	4095	5415	5800	5700	5600	5600	5600	5600
INDIRECT	353	1058	2829	6606	9068	10194	9292	7333	5333	3779	3456	3453	3453
TOTAL	633	1558	3608	8814	11670	14289	14707	13133	11033	9379	9056	9053	9053

SOURCE: HDR SCIENCES, 16-SEP-81

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years, peaking at 2,900 workers in 1983. Coyote Spring would be the location of the second operating base under Alternatives 4 and 6.

Compared to baseline employment forecasts by industry, developed by the Bureau of Economic and Business Research of the University of Utah, the M-X labor demand figure would represent 17 percent of Clark County's construction industry employment of 16,900 in 1983. Growth of this magnitude would require adjustments in the county's construction trades. Shortages of skilled workers, wage escalation, and in-migration of workers from outside the county would be likely. Operations personnel would be required by 1983, with full base staffing of 7,700 persons reached by 1987. Direct employment under Alternatives 4 and 6 would be less than for the Proposed Action, since Coyote Spring Valley would be the second, smaller operating base.

Large numbers of jobs indirectly related to M-X would be created in Clark County. The principal source would be county-level expansion induced by the spending of project money earned by direct employees. There also would be local procurement of goods and services from area suppliers, who, in turn, would expand employment to meet the increased demand. Project-related investments by governments and private business would induce growth of secondary employment. Indirect employment in Clark County under the Proposed Action would begin in 1982 and peak at 13,100 jobs in 1986 (Table 3.1.3.2-1). It would decline thereafter, and stabilize at about 4,200 jobs by 1992.

Tables 3.1.3.2-1 and 3.1.3.2-2 also detail changes in total employment. According to Table 3.1.3.2-1, the Proposed Action would result in peak total employment of 22,700 jobs in Clark County in 1987 as a result of M-X deployment. Assuming some workers would choose to live in Lincoln County, this figure would decline to 22,200 jobs after adjustment for cross county commuting. It would represent about 8 percent of projected county trend-growth employment, and 11 percent of 1980 county employment of 193,200 persons. This table also shows that in the long run, M-X would generate 12,000 jobs (including military) in Clark County, about 4 percent of the county's trend-growth baseline employment of 306,700 in 1991. Directly related M-X jobs and some secondary jobs would be created at the base site itself, while many additional indirect jobs would be created in Las Vegas. Alternative 1, 2, and 8 would create similar growth in total employment. Alternatives 4 and 6 would give rise to a smaller, immediate increase particularly in the short run (Table 3.1.3.2-2).

Construction and operation of a base at Coyote Spring also would create employment opportunities for residents of Lincoln County, Nevada. The towns of Caliente, Pioche, and Panaca in Lincoln County are close enough to the Clark County border to be influenced by activity at Coyote Spring.

Table 3.1.3.2-3 presents detailed employment impacts by place of employment for Lincoln County. They indicate that peak direct employment in Lincoln County would reach 4,700 jobs in 1985, of which three-fourths would be in construction and all related to DDA facilities. These job requirements would compare to a 1985 baseline forecast of 20 jobs in the construction industry and total employment of 1,850 in Lincoln County. Peak total employment would equal 6,800 jobs under the Proposed Action. DDA construction would end by 1987, but indirect employment would continue; this would be the result of spillover impacts from neighboring OB



Table 3.1.3.2-3.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN LINCOLN

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT MILFORD, UT (BEAVER CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	197	817	1762	3549	2067	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	10	100	200	1150	1400	300	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	0	0	0	0	0	0	0	0	0	0
ENLISTED PERSONNEL	0	0	0	0	0	0	0	0	0	0	0	0	0
CIVILIANS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DIRECT	207	917	1962	4699	3467	300	0	0	0	0	0	0	0
INDIRECT	119	464	960	2082	1933	824	352	220	133	107	105	104	104
TOTAL	326	1381	2922	6781	5400	1124	352	220	133	107	105	104	104

SOURCE: HDR SCIENCES, 16-SEP-81

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counties, especially Clark County. Greatest long-term impacts in Lincoln County, 1,100 jobs, result with Alternative 4, where the larger operating base is located in Iron County and the smaller operating base is in Clark County (see ETR-2C).

An employment increase of 1,100 jobs would represent 44 percent of the county's trend-growth baseline of 2,400 jobs in 1994. Other alternatives, with base locations more distant, would generate smaller long run impacts. Lincoln County would experience boom-growth problems in the short run, for a short period, followed by some decline of project employment. However, unlike the situation in other DDA counties, some M-X-related employment is projected to become a permanent feature of the county's economy.

#### Labor Force Effects (3.1.3.2.2)

Markets for skilled construction labor would be very tight during peak construction activity, leading to short-term, significant escalation of wages for these construction crafts. These labor shortages would extend to other occupations as more mobile workers seek the relatively higher wages paid on M-X jobs. Even in a large metropolitan area like Clark County, in-migration of additional workers would result.

Tables 3.1.3.2-4 and 3.1.3.2-5 present baseline employment data and impact estimates of employment, unemployment, and labor force in-migration that would occur in Clark County with the choice of the Proposed Action or Alternative 4 (see ETR-2C). These tables assume trend-growth baseline projections. Total M-X-related employment is broken into the categories of construction, assembly and checkout, military, and civilian employment, the categories of direct and indirect labor demand presented in Table 3.1.3.2-4 with an adjustment for cross-county commuting to Lincoln County. Employment peaks at 22,200 persons in 1987. In the same year, the county's available resident labor force (the number of workers available for added jobs without significant in-migration) is projected to equal about 4,800 persons. This estimate is derived from the projected unemployed labor force, adjusted to account for persons who would remain unemployed even in tight labor market conditions.

The M-X labor force in-migration forecast is derived by comparison of the expected available labor pool in Clark County with M-X demand for labor. It represents cumulative labor in-migration into Clark County, which in 1987 is projected to equal 11,900 persons. Thereafter, Table 3.1.3.2-4 indicates a decline in civilian labor force increases over baseline conditions, with some workers leaving the county as job opportunities diminish. Compared to trend-growth conditions, M-X would add about 3,600 persons to the civilian labor force of the county in the long run when the first OB is located at Coyote Spring.

Alternatives 1, 2, and 8 generate similar levels of civilian in-migration, while Alternatives 4 and 6 produce smaller impacts (Table 3.1.3.2-5). Subsequent to peak in-migration, labor markets would become more slack; unemployment rates would tend to rise; labor force participation rates would fall; and the induced rise in some wages would begin to diminish in relative terms.

Lincoln County would experience labor in-migration both as the result of DDA construction and as a result of M-X base operations in neighboring counties.

Table 3.1.3.2-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN CLARK

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COYOTE SPRING, NV (CLARK CO.)  
BASE II AT MILFORD, UT (BEAVER CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	49582	51311	531698	550973	572244	594187	616853	640316	664735	684035	703867	724292	745296
LF PARTICIPATION RATE	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80
LABOR FORCE	236888	245363	254152	263365	273533	284021	294856	306071	317743	326969	336448	346212	356251
EMPLOYMENT LF CONCEPT	218648	226470	234582	243086	252471	262152	272152	282504	293277	302446	311888	321631	331670
UNEMPLOYMENT	18240	18893	19570	20279	21062	21869	22704	23567	24466	24523	24560	24581	24581
UNEMPLOYMENT RATE	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.50	7.30	7.10	6.90
RESIDENTIAL LF	4027	4171	4321	4477	4650	4828	5013	5203	5402	4905	4374	3808	3206
--FOR CONSTRUCTION	1208	1251	1296	1343	1395	1449	1504	1561	1620	1471	1312	1142	962
--FOR OPERATIONS	805	834	864	895	930	966	1003	1041	1080	981	875	762	641
--FOR IND. EMPLOYMENT	2014	2086	2160	2239	2325	2414	2506	2602	2701	2452	2187	1904	1603
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	20	82	176	355	207	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	281	510	620	415	340	230	200	200	100	0	0	0	0
BASE CONSTRUCTION	1322	2789	2624	2487	1487	999	0	0	0	0	0	0	0
BASE ASS. & CKOUT	48	190	475	855	1188	1188	1188	1188	238	0	0	0	0
OPERATIONS, MILITARY	0	35	173	2024	4588	6185	6185	6185	6185	6185	6185	6185	6185
OPERATIONS, CIVILIAN	0	2	49	456	806	1151	1151	1159	1159	1159	1159	1159	1159
INDIRECT EMPLOYMENT	2016	5285	7942	11692	13064	12495	10018	6825	4784	4265	4222	4221	4221
TOTAL	3687	8892	12060	18285	21679	22248	18742	15556	12465	11609	11565	11565	11565
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	146	1760	1635	1629	324	0	0	0	0	0	0	0	0
ASS. AND CKOUT LF	49	200	495	970	1328	1218	1188	1188	238	0	0	0	0
CIVILIAN OPS	0	0	0	0	0	186	149	118	79	178	284	397	518
SECONDARY	207	889	1056	1883	2695	3379	3350	3335	2965	2891	2946	3005	3068
ADDITIONAL INDIRECT	0	2391	4824	7777	8370	7118	4575	1301	0	0	0	0	0
TOTAL LF	401	5240	8010	12259	12717	11900	9262	5942	3281	3069	3230	3403	3586
<b>PROJECTIONS WITH M-X</b>													
POPULATION	496832	527234	554701	588658	616103	637618	651659	664135	681620	700366	720495	741237	762578
CIV. LABOR FORCE	237289	250603	262161	275624	286250	295922	304118	312013	321025	330038	339679	349614	359837
EMPLOYMENT LF CONCEPT	222334	235327	246469	259346	269562	278215	284709	291875	299557	307870	317268	327011	337050
UNEMPLOYMENT	14955	15276	15692	16278	16688	17707	19409	20138	21468	22168	22411	22603	22787
UNEMPLOYMENT RATE	6.30	6.10	6.00	5.90	5.80	6.00	6.40	6.50	6.70	6.70	6.60	6.50	6.30

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.2-5.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN CLARK

ALTERNATIVE 4: FULL DEPLOYMENT - NEVADA/UTAH (L)  
BASE I AT GERYL, UT (IRON CO.)  
BASE II AT COYOTE SPRING, NV (CLARK CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	495378	512955	531154	550000	571110	593040	615800	639450	663990	683250	703050	723440	744410
LF PARTICIPATION RATE	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80	47.80
LABOR FORCE	236791	245192	253892	262900	272991	283473	294352	305657	317387	326594	336058	345804	355828
EMPLOYMENT: LF CONCEPT	218558	226313	234342	242657	251970	261646	271687	282122	292948	302099	311526	321252	331276
UNEMPLOYMENT	18233	18879	19550	20243	21021	21827	22665	23535	24439	24495	24532	24552	24552
UNEMPLOYMENT RATE	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.70	7.50	7.30	7.10	6.90
RESIDENTIAL LF	4025	4168	4316	4469	4641	4819	5004	5196	5396	5600	5804	6004	6202
--FOR CONSTRUCTION	1208	1250	1295	1341	1392	1446	1501	1559	1619	1679	1739	1799	1859
--FOR OPERATIONS	805	834	863	894	928	964	1001	1039	1079	1119	1159	1199	1239
--FOR IND. EMPLOYMENT	2013	2084	2158	2235	2320	2410	2502	2598	2698	2799	2899	2999	3099
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	20	82	176	355	207	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	281	510	620	415	340	230	200	200	100	0	0	0	0
BASE CONSTRUCTION	0	0	170	1783	2048	1804	682	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	48	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	28	173	1595	3494	4337	4337	4337	4337	4337	4337
OPERATIONS, CIVILIAN	0	0	0	2	61	254	778	983	983	983	983	983	983
INDIRECT EMPLOYMENT	353	1058	2829	6606	9068	10194	9292	7333	5333	3779	3456	3453	3453
TOTAL	654	1650	3795	9188	11897	14124	14447	12853	10753	9099	8776	8773	8773
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	0	0	867	938	389	0	0	0	0	0	0	0
ASS. AND CKOUT LF	1	10	20	115	140	78	0	0	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	0	0	0	0	0	3	109	222	343
SECONDARY	146	264	319	475	519	972	1685	2056	2014	1964	2019	2078	2141
ADDITIONAL INDIRECT	0	0	380	3939	6279	6929	5320	2933	881	0	0	0	0
TOTAL LF	147	274	720	5396	7875	8367	7005	5000	2895	1967	2129	2301	2484
<b>PROJECTIONS WITH M-X</b>													
POPULATION	496164	514373	534136	556063	595342	621848	643021	660880	678305	694362	714459	735165	756472
CIV. LABOR FORCE	236938	245467	254611	268296	280866	291841	301358	310657	320282	328561	338186	348105	358312
EMPLOYMENT: LF CONCEPT	219212	227963	238137	251817	263694	274175	282640	290638	299365	308861	315965	325689	335712
UNEMPLOYMENT	17726	17504	16474	16479	17172	17666	18718	20019	20917	21700	22221	22416	22600
UNEMPLOYMENT RATE	7.50	7.10	6.50	6.10	6.10	6.10	6.20	6.40	6.50	6.60	6.60	6.40	6.30

SOURCE: HDR SCIENCES, 16-SEP-81

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Tables 3.1.3.2-6 and 3.1.3.2-7 present impact estimates of employment and civilian labor in-migration that could be expected to occur with the adoption of the Proposed Action of the relevant alternatives. These tables also present trend-growth baseline forecasts. Civilian labor in-migration would be greatest with the implementation of Alternative 4, where cumulative in-migration peaks at 8,000 persons in 1985, declines, and then stabilizes at 600 by 1991 (Table 3.1.3.2-7). Civilian in-migration into Lincoln County would be nearly as large with the choice of Alternative 1 (see ETR-2G) over the 1982-1994 period, but only one-third as great should the Proposed Action, Alternatives 2 and 6, or split deployment be adopted. Long-term, in-migration would range from 10 percent to almost 30 percent of the county's baseline work force.

Unemployment rates would tend to be higher in the long run with the project than without it, reflecting an excess of potential dependents of primary M-X employees over available indirect project employment.

### **Delta (3.1.3.3)**

Delta would be the location of a second operating base under Alternative 2. Base-associated employment in Millard County for this alternative, as well as employment related to construction of DDA facilities under every alternative, would significantly change the size and structure of the small, agriculture-dominated local economy. Similar significant short-term effects on employment and labor force would also occur in Beaver and Juab counties.

#### Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.3.1)

Employment effects result primarily from the project's demand for construction and operations labor. Table 3.1.3.3-1 presents direct, indirect and total labor requirements in Millard County for Alternative 2, including DDA construction and assembly and checkout. Construction of DDA facilities in Millard County is projected to begin in 1982, run for five years, and peak at 3,800 jobs in 1985. Base construction is scheduled to begin in 1984 and peak in 1986 at 2,150 jobs. Completion of base construction is expected to occur by 1988.

Compared with trend-growth employment projections developed by the Bureau of Economic and Business Research, University of Utah, the combined peak construction labor demand of 5,650 persons in 1985 would be 94 times projected employment of 60 jobs in the contract construction industry. Construction employment on this scale would create significant stress in the county's building trade industry, creating skilled labor shortages, wage escalation, and large-scale in-migration of workers to Millard County.

Cumulative employment impacts from other projects would exacerbate growth-stress in construction sectors in the county. It would imply a larger local labor supply for potential M-X-related employment, though much of this additional labor force would be employed without M-X. In particular, the Intermountain Power Project (IPP) is scheduled to be constructed in the county during the same period as M-X.

Operation of the base would begin in 1985, and it would become fully operational by 1989. Table 3.1.3.3-1 indicates that long run direct employment in

Table 3.1.3.2-6.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN LINCOLN

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH  
BASE 1 AT COYOTE SPRING, NV (CLARK CO.)  
BASE II AT MILFORD, UT (BEAVER CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	3922	4042	4163	4292	4416	4546	4686	4825	4965	5113	5274	5425	5595
LF PARTICIPATION RATE	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50
LABOR FORCE	1785	1839	1894	1953	2009	2068	2132	2195	2259	2326	2400	2468	2546
EMPLOYMENT: LF CONCEPT	1690	1742	1794	1849	1903	1959	2019	2079	2139	2203	2272	2338	2411
UNEMPLOYMENT	95	97	100	104	106	109	113	116	120	123	128	130	135
UNEMPLOYMENT RATE	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30
RESIDENTIAL LF	23	24	25	25	26	27	28	29	29	30	31	32	33
--FOR CONSTRUCTION	7	7	7	8	8	8	8	9	9	9	9	10	10
--FOR OPERATIONS	5	5	5	5	5	5	6	6	6	6	6	6	7
--FOR IND. EMPLOYMENT	12	12	12	13	13	13	14	14	15	15	16	16	17
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	195	808	1771	3561	2286	390	201	57	0	0	0	0	0
SHELTER ASS. & CKOUT	9	90	184	1040	1383	413	91	63	1	0	0	0	0
BASE CONSTRUCTION	70	147	138	131	78	53	0	0	0	0	0	0	0
BASE ASS. & CKOUT	3	10	25	45	63	63	63	63	13	0	0	0	0
OPERATIONS, MILITARY	0	2	9	107	241	326	326	326	326	326	326	326	326
OPERATIONS, CIVILIAN	0	0	3	24	42	61	61	61	61	61	61	61	61
INDIRECT EMPLOYMENT	119	464	960	2082	1933	824	352	220	133	107	105	104	104
TOTAL	395	1521	3090	6990	6026	2128	1093	789	533	494	491	491	491
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	280	1030	2067	4005	2561	472	209	53	0	0	0	0	0
ASS. AND CKOUT LF	12	100	209	1085	1445	475	154	125	14	0	0	0	0
CIVILIAN OPS	0	0	0	19	37	55	55	55	55	55	55	55	54
SECONDARY	91	354	714	1646	1379	472	289	232	180	176	176	176	176
ADDITIONAL INDIRECT	25	130	298	573	670	387	81	1	0	0	0	0	0
TOTAL LF	407	1614	3288	7328	6092	1861	788	466	249	231	231	230	230
<b>PROJECTIONS WITH M-X</b>													
POPULATION	4629	6971	10253	18034	16310	8679	6597	6138	5977	6100	6261	6411	6581
CIV. LABOR FORCE	2192	3454	5182	9281	8101	3930	2921	2661	2508	2557	2630	2699	2776
EMPLOYMENT: LF CONCEPT	2085	3261	4875	8732	7687	3761	2787	2543	2347	2371	2438	2503	2576
UNEMPLOYMENT	107	193	307	549	414	169	134	118	161	186	192	196	200
UNEMPLOYMENT RATE	4.90	5.60	5.90	5.90	5.10	4.30	4.60	4.50	6.40	7.30	7.30	7.30	7.20

SOURCE: HDR SCIENCES, 16-SEP-81

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EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS.  
WITH AND WITHOUT M-X, IN CLARK CO.

ALTERNATIVE 4 FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT COYOTE SPRING, NV (CLARK CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	3922	4042	4163	4292	4416	4546	4686	4825	4965	5113	5274	5425	5595
LF PARTICIPATION RATE	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50	45.50
LABOR FORCE	1785	1839	1894	1953	2009	2068	2132	2195	2259	2326	2400	2468	2546
EMPLOYMENT: LF CONCEPT	1690	1742	1794	1849	1903	1959	2019	2079	2139	2203	2272	2338	2411
UNEMPLOYMENT	95	97	100	104	106	109	113	116	120	123	128	130	135
UNEMPLOYMENT RATE	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30
RESIDENTIAL LF	23	24	25	25	26	27	28	29	29	30	31	32	33
--FOR CONSTRUCTION	7	7	7	8	8	8	8	9	9	9	9	10	10
--FOR OPERATIONS	5	5	5	5	5	5	6	6	6	6	6	6	7
--FOR IND. EMPLOYMENT	12	12	12	13	13	13	14	14	15	15	16	16	17
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	195	808	1771	3561	2286	390	201	57	0	0	0	0	0
SHELTER ASS. & CKOUT	9	90	184	1040	1383	413	91	63	1	0	0	0	0
BASE CONSTRUCTION	209	440	423	487	343	253	36	0	0	0	0	0	0
BASE ASS. & CKOUT	8	30	75	135	188	190	188	188	38	0	0	0	0
OPERATIONS, MILITARY	0	2	9	108	251	409	509	554	554	554	554	554	554
OPERATIONS, CIVILIAN	0	0	8	72	130	195	223	235	235	235	235	235	235
INDIRECT EMPLOYMENT	151	542	1058	2259	2156	1074	577	428	319	284	280	280	280
TOTAL	571	1913	3528	7662	6735	2924	1825	1523	1146	1072	1068	1068	1068
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	431	1350	2377	4392	2849	690	248	53	0	0	0	0	0
ASS. AND CKOUT LF	17	120	259	1175	1570	603	279	250	39	0	0	0	0
CIVILIAN OPS	0	0	3	67	125	190	217	229	229	229	229	228	228
SECONDARY	140	459	828	1821	1557	688	508	465	382	370	370	370	370
ADDITIONAL INDIRECT	12	112	292	591	730	443	110	1	0	0	0	0	0
TOTAL LF	599	2041	3759	8046	6831	2612	1363	997	650	599	598	598	598
<b>PROJECTIONS WITH M-X</b>													
POPULATION	4868	7519	10889	19091	17522	10076	7914	7431	7093	7171	7331	7482	7651
CIV. LABOR FORCE	2384	3880	5653	9999	8840	4681	3495	3192	2909	2925	2998	3066	3143
EMPLOYMENT: LF CONCEPT	2261	3652	5312	9403	8387	4473	3335	3049	2732	2722	2787	2852	2925
UNEMPLOYMENT	123	228	341	596	453	208	160	143	177	203	211	214	218
UNEMPLOYMENT RATE	5.20	5.90	6.00	6.00	5.10	4.40	4.60	4.50	6.10	7.00	7.00	7.00	6.90

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.3-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN MILLARD

ALTERNATIVE 2: FULL DEPLOYMENT - NEVADA/UTAH  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT DELTA, UT (MILLARD CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	197	817	1867	3769	2978	1449	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	50	25	875	1125	525	0	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
TOTAL DIRECT	197	817	2096	5702	6255	6469	5740	5600	5600	5600	5600	5600	5600
INDIRECT	42	188	932	2774	3886	4597	4161	3427	2617	1633	1395	1382	1382
TOTAL	239	1005	3028	8476	10141	11066	9901	9027	8217	7233	6995	6982	6982

SOURCE: HDR SCIENCES, 16-SEP-81

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Millard County would equal 5,600 jobs, 82 percent of which would be military personnel.

Indirect employment would begin in 1982, peak at 4,600 jobs in 1987, and decline thereafter until it reaches a long run level of 1,400 jobs in 1992. The principal source of indirect employment is the respending of project payrolls earned by direct employees in the county. There also would be local procurement of goods and services from area suppliers, requiring additional employment expansion to meet the increased demand. Project-related investment by local, state, and federal governments and private business would also create additional short-run indirect employment.

Total peak employment by place of work could reach 11,100 jobs in 1987. Base construction is scheduled for completion that year, assembly and check-out personnel would finish in 1988, and indirect labor requirements would steadily decrease. After 1992, long run employment in Millard County would provide 7,000 jobs. On a place-of-residence basis (Table 3.1.3.3-2), peak employment impacts could amount to 11,100 jobs, with long-term employment of 6,900 related to M-X.

Delta and a number of small communities would likely experience growth-stress. The county economy has been characterized by the dominance of the agricultural and government sectors, and, to a lesser extent, trade and manufacturing. The services and construction sectors traditionally have accounted for relatively small shares of county employment. Having historically experienced modest employment growth, the very rapid expansion of employment in the county would create significant economic dislocation. These would include wage and price inflation and shortages in key occupations. Growth of ancillary industries to supply consumption demands and base procurement needs would change the county's economic structure.

Employment effects in Beaver County result primarily from construction of the DDA (Table 3.1.3.3-3). This work is scheduled to begin in 1982, peak in 1985 at around 1,800 jobs, and be completed in 1986. Assembly and checkout of the technical facilities will require 25 jobs in 1984 and 1985 and 800 jobs in 1986. The following year 325 assembly and checkout jobs will be required to complete the task. Total direct employment would peak in 1986 at 1,900 jobs, of which approximately 100 would be in construction at the base.

Indirect employment created by M-X is expected to grow from 26 jobs in 1982 to nearly 600 in 1986. Because of the distance from the Delta OB site to Beaver County, long run Beaver County employment gains from the base are unlikely. Indirect employment is projected to decrease until 1991 when no M-X-related employment effects are expected in Beaver County. The total peak employment impact is expected to reach almost 2,600 workers in 1987 in Beaver County, which will put a significant amount of stress on the small rural communities. In the following three years, total M-X-related employment in the county will drop to about 50 jobs. Severe economic stress is expected to occur in the county during this period of labor out-migration.

Construction of technical facilities in Juab County is expected to start in 1984. By 1987, 2,350 construction jobs (on a place-of-work basis) are projected for the county (see ETR-2F). Scheduled completion of the work is 1989, the same year

Table 3.1.3.3-2.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN MILLARD

ALTERNATIVE 2: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COYOTE SPRING, NV (CLARK CO )  
BASE II AT DELTA, UT (MILLARD CO )

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	11899	12671	15842	18746	18489	18875	18347	16140	14920	15067	15234	15379	15504
LF PARTICIPATION RATE	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30	40 30
LABOR FORCE	4795	5106	6384	7555	7451	7607	7394	6504	6013	6072	6139	6198	6248
EMPLOYMENT LF CONCEP	4556	4851	6065	7177	7079	7226	7024	6179	5712	5768	5832	5888	5936
UNEMPLOYMENT	239	255	319	378	372	381	370	325	301	304	307	310	312
UNEMPLOYMENT RATE	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00	5 00
RESIDENTIAL LF	48	51	64	76	75	76	74	65	60	61	61	62	62
FOR CONSTRUCTION	14	15	19	23	22	23	22	20	18	18	18	19	19
FOR OPERATIONS	10	10	13	15	15	15	15	13	12	12	12	12	12
FOR IND. EMPLOYMEN	24	26	32	38	37	38	37	33	30	30	31	31	31
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	167	694	1635	3319	2916	1936	614	298	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	43	21	751	1031	649	270	0	0	0	0	0
BASE CONSTRUCTION	0	0	152	1595	1833	1614	610	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	43	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	29	182	1679	3678	4565	4565	4565	4565	4565	4565
OPERATIONS, CIVILIAN	0	0	0	2	58	240	737	932	932	932	932	932	932
INDIRECT EMPLOYMENT	42	188	932	2774	3886	4597	4161	3427	2617	1633	1395	1382	1382
TOTAL	210	883	2762	7741	9625	11140	10449	9491	8113	7129	6892	6878	6878
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	166	738	1922	5318	5137	3834	1306	303	0	0	0	0	0
ASS. AND CKOUT LF	0	0	43	21	751	1074	649	270	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	43	225	722	918	919	919	919	919	919
SECONDARY	52	230	613	1679	1942	2408	2651	2723	2545	2545	2545	2545	2545
ADDITIONAL INDIRECT	0	0	343	1209	2085	2398	1779	998	353	0	0	0	0
TOTAL LF	218	968	2920	8227	9958	9938	7107	5213	3818	3464	3464	3464	3464
<b>PROJECTIONS WITH M-X</b>													
POPULATION	12290	14401	21557	35282	39609	42871	39837	34754	30357	29328	29494	29639	29764
CIV. LABOR FORCE	5014	6075	9304	15782	17409	17545	14500	11718	9831	9536	9604	9662	9712
EMPLOYMENT LF CONCEP	4765	5734	8827	14889	16522	16687	13795	11106	9260	8333	8159	8201	8249
UNEMPLOYMENT	249	341	477	893	887	858	705	612	571	1203	1445	1461	1463
UNEMPLOYMENT RATE	4 90	5 60	5 10	5 70	5 10	4 90	4 90	5 20	5 80	12 60	15 00	15 10	15 10

SOURCE HDR SCIENCES, 16-SEP-81

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Table 3.1.3.3-3.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN BEAVER

ALTERNATIVE 2: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COVOTE SPRING, NV (CLARK CO.)  
BASE II AT DELTA, UT (MILLARD CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6548	8663	9835	10993	11983	10023	9715	9814	9965	10130	10291	10455	10566
LF PARTICIPATION RATE	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80
LABOR FORCE	2934	3881	4406	4925	5368	4490	4352	4397	4464	4538	4610	4684	4734
EMPLOYMENT: LF CONCEPT	2749	3637	4128	4615	5030	4207	4078	4120	4183	4252	4320	4389	4435
UNEMPLOYMENT	185	244	278	310	338	283	274	277	281	286	290	295	299
UNEMPLOYMENT RATE	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
RESIDENTIAL LF	67	89	101	113	123	103	100	101	103	104	106	108	109
--FOR CONSTRUCTION	20	27	30	34	37	31	30	30	31	31	32	32	33
--FOR OPERATIONS	13	18	20	23	25	21	20	20	21	21	21	22	22
--FOR IND. EMPLOYMENT	34	45	51	57	62	52	50	51	51	52	53	54	54
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	105	435	926	1828	1178	145	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	25	23	728	373	53	0	0	0	0	0	0
BASE CONSTRUCTION	0	0	9	94	108	95	36	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	3	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONS, CIVILIAN	0	0	0	0	3	13	41	52	52	52	52	52	52
INDIRECT EMPLOYMENT	26	117	269	535	580	258	68	19	3	0	0	0	0
TOTAL	132	552	1229	2479	2597	886	197	71	55	52	52	52	52
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	92	444	983	2052	1357	227	6	0	0	0	0	0	0
ASS. AND CKOUT LF	0	0	25	23	728	375	53	0	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	0	0	21	32	31	31	31	30	30
SECONDARY	29	139	315	647	650	188	29	16	16	16	16	16	16
ADDITIONAL INDIRECT	0	0	0	0	0	35	0	0	0	0	0	0	0
TOTAL LF	121	583	1323	2722	2735	825	109	48	48	47	46	46	46
<b>PROJECTIONS WITH M-X</b>													
POPULATION	6758	9670	12109	15630	16667	11386	9880	9902	10052	10216	10377	10540	10650
CIV. LABOR FORCE	3055	4464	5729	7647	8103	5315	4461	4445	4512	4585	4657	4730	4779
EMPLOYMENT: LF CONCEPT	2880	4188	5358	7094	7627	5093	4275	4190	4238	4304	4372	4441	4487
UNEMPLOYMENT	175	276	371	553	476	222	186	255	274	281	285	289	292
UNEMPLOYMENT RATE	5.70	6.20	6.50	7.20	5.90	4.20	4.20	5.70	6.10	6.10	6.10	6.10	6.10

SOURCE: HDR SCIENCES, 16-SEP-81

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that assembly and checkout of the facilities is expected to both peak and finish. Total direct employment would peak in 1988 at more than 2,700 jobs.

On a place-of-residence basis, the number of M-X workers in Juab County would be somewhat less because of the likelihood of cross-county commuting from Millard and Utah counties. Table 3.1.3.3-4 indicates direct employment by place of residence would peak at 2,000 jobs.

Indirect employment is also projected to peak in 1988 at 650 jobs. About 80 long-term indirect jobs are expected in Juab County, mostly to supply goods and services to operations personnel from the Delta operating base. Total M-X-related employment would peak at 3,350 jobs in 1988 on a place-of-work basis, and 2,600 in 1987 on a place-of-residence basis. Effects on the economic structures of communities from this rapid employment buildup are expected to be significant. Wage escalation and shortages of skilled labor are very likely during this period. Following the peak employment year, a rapid out-migration of workers would occur as project activity ceased. Increased unemployment levels are expected as this occurs.

#### Labor Force Effects (3.1.3.3.2)

Local labor markets would become very tight, especially during the buildup phases in the county. This problem would be particularly acute for the construction trades. In such a relatively small labor market, significant in-migration of construction and operations personnel would be required. Some indirectly employed workers would also in-migrate from outside the county. Table 3.1.3.3-2 presents employment, population, and labor force projections, with and without M-X, for Millard County under Alternative 2. The labor in-migration figures are critical because they form the basis for civilian M-X-related population growth and determine key impacts on the local infrastructure, services, and government finance. After adjustment for cross-county commuting, estimates of total civilian M-X-related employment in the tables are determined by place of residence, derived from direct and indirect labor demand projections as presented in Table 3.1.3.3-2.

During the peak employment years, Millard County's available resident labor force is forecast to equal about 50 persons. This "without M-X" projection represents an estimate of the future unemployed labor force less those persons who would likely remain unemployed even in extremely tight labor markets.

Cumulative civilian labor in-migration into the county in 1986 and 1987 would equal about 10,000 workers, which means that up to and including 1987, a net total of 10,000 civilian workers would become new residents of the county. Table 3.1.3.3-2 also indicates rapid out-migration between 1987 and 1991 as job opportunities in the county diminish. Total labor force figures with M-X decline to about 3,500 persons by 1991. This is the estimated total civilian worker in-migration into Millard County under Alternative 2. Total labor in-migration including military personnel would exceed 8,000 persons.

Following peak in-migration, labor market stress would decline somewhat but unemployment rates are projected to increase as indirect employment opportunities are reduced. Project-induced differentials between construction wages and earnings

Table 3.1.3.3-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN JUAB

ALTERNATIVE 2: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COYOTE SPRING, NV (CLARK CO.)  
BASE II AT DELTA, UT (MILLARD CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6536	7699	8535	9274	9276	9430	9330	8954	8364	8494	8623	8746	8849
LF PARTICIPATION RATE	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50	38.50
LABOR FORCE	2516	2964	3286	3570	3571	3631	3592	3447	3220	3270	3320	3367	3407
EMPLOYMENT: LF CONCEPT	2340	2757	3056	3321	3321	3376	3341	3206	2995	3041	3087	3132	3168
UNEMPLOYMENT	176	207	230	249	250	255	251	241	225	229	233	235	239
UNEMPLOYMENT RATE	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
RESIDENTIAL LF	75	89	99	107	107	109	108	103	97	98	100	101	102
--FOR CONSTRUCTION	23	27	30	32	32	33	32	31	29	28	30	30	31
--FOR OPERATIONS	15	18	20	21	21	22	22	21	19	20	20	20	21
--FOR IND. EMPLOYMENT	38	44	49	54	54	54	54	52	48	49	50	51	51
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	10	41	197	439	982	1598	1329	646	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	3	1	60	219	465	585	0	0	0	0	0
BASE CONSTRUCTION	0	0	18	188	216	190	72	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	5	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONS, CIVILIAN	0	0	0	0	3	13	41	52	52	52	52	52	52
INDIRECT EMPLOYMENT	3	16	64	163	337	576	644	484	167	88	84	84	84
TOTAL	13	56	282	792	1598	2601	2551	1767	219	139	136	136	136
<b>M-X LF INMIGRATION</b>													
CONSTRUCTION LF	0	15	202	647	1267	1908	1488	669	0	0	0	0	0
ASS. AND CKOUT LF	0	0	3	1	60	224	465	585	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	0	0	19	31	32	32	32	32	31
SECONDARY	0	5	64	202	414	665	619	407	17	17	17	16	16
ADDITIONAL INDIRECT	0	0	0	0	0	0	26	61	103	23	19	19	18
TOTAL LF	0	20	268	850	1741	2797	2618	1753	153	72	68	67	66
<b>PROJECTIONS WITH M-X</b>													
POPULATION	6536	7727	8968	10617	12302	14549	14330	12434	8799	8662	8777	8897	8998
CIV. LABOR FORCE	2516	2984	3554	4421	5312	6427	6210	5201	3373	3342	3388	3434	3473
EMPLOYMENT: LF CONCEPT	2354	2813	3338	4112	4919	5978	5891	4973	3213	3181	3223	3268	3304
UNEMPLOYMENT	162	171	216	309	393	449	319	228	160	161	165	166	169
UNEMPLOYMENT RATE	6.50	5.70	6.10	7.00	7.40	7.00	5.10	4.40	4.70	4.80	4.80	4.80	4.80

SOURCE: HDR SCIENCES, 16-SEP-81

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in other sectors would begin to decline. Occupational transition would also occur, out of short run, boom-growth industries and into service and trade sectors associated with continued base operation.

Significant impacts on local labor markets in Beaver County would occur during the M-X-related employment buildup phase, especially in the construction crafts. More workers are projected to be drawn into the county than available M-X-associated jobs that will exist. Table 3.1.3.3-3 indicates that labor force in-migration is expected to exceed 2,700 persons in 1985 and 1986, although less than 2,600 M-X direct and indirect jobs are projected in those years. Excess labor force in-migration is expected to increase county unemployment during the first four years of construction to 8.2 percent under the trend-growth baseline projection and 7.2 percent under the high-growth baseline. Under both baselines the unemployment rate without M-X is projected to be about 6.3 percent annually during this period. In the following years, rapid out-migration is expected to cause the unemployment rate to drop to about 4.0 and 4.2 percent under the trend and high-growth baselines, respectively. By 1990, the county unemployment rate would tend to increase to levels above 6.0 percent under both baselines. It is projected that about 50 persons working at the Delta operating base would reside in Beaver County.

Local labor markets in Juab County become very tight during M-X deployment. Construction trades would be affected most during this period. Significant in-migration of construction personnel would be required to fill M-X-related employment needs. During peak construction more workers are expected to be drawn into Juab County than there are M-X-related jobs, causing unemployment rates to increase slightly over trend-growth projections for that period. Table 3.1.3.3-4 indicates that in 1986, 1,750 persons would in-migrate into the county but there would only be enough jobs for 1,600 workers. An unemployment rate of 7.7 percent that year results from this excess in-migration.

In the long run, the unemployment rate is expected to decrease to less than 5.0 percent annually, two percentage points below the trend-growth projection in the early 1990s.

High-growth projections, shown in ETR-2F, indicate that other projects would increase employment impacts, especially during the peak M-X construction years. An additional 800 workers are expected in the county as a result of other projects during the peak year, 1987. This alone is 31 percent over the trend-growth baseline projection. Cumulatively, M-X plus other projects would mark an increase over the trend-growth forecast of 132 percent. In the long run, an additional 275 workers are projected from other projects, an increase of less than 10 percent over the trend-growth baseline. Cumulatively, M-X plus other projects would be 14 percent over the trend-growth projection in 1994.

#### **Ely (3.1.3.4)**

Ely would be the location of the second operating base under Alternatives 3 and 5. Jobs would be created in White Pine County by building and operation of the base. Jobs would also be created from construction, assembly, and checkout of DDA facilities under all alternatives in Nevada/Utah. These employment effects would significantly alter the size and structure of the county's economy.

#### Direct, Indirect and Total M-X-Related Employments Effects (3.1.3.4.1)

Table 3.1.3.4-1 presents direct, indirect, and total labor demands for Alternative 3, and DDA construction labor projections for all full deployment options in Nevada/Utah. Since Alternative 5 labor demands are identical to those for Alternative 3, they are not presented here. Construction of DAA facilities is projected to begin in 1984 and last 5 years. Demand will peak at 2,600 jobs in 1986. An additional 570 workers would be employed in assembly and checkout at DAA camps in 1986. Operating base construction under both alternatives is scheduled concurrently, with a peak of 2,200 jobs in 1987. Trend-growth employment projections presented in Chapter 3 of the FEIS indicates a total of less than 100 jobs in the construction industry in White Pine County in 1987. This is about 2 percent of the combined DAA and OB peak construction labor demand of 4,500 workers. Peak construction demand alone would be 150 percent of total trend-growth baseline employment of 3,000 jobs in that year (see Section 3.2.3.1.4 of the FEIS). Employment demand on this scale would create significant short-term stress in the building trades industry, inducing skilled labor shortages, wage escalation, and large-scale in-migration of workers into White Pine County.

Impacts from other projects would exacerbate growth-stress in this county. It is likely that other projects--notably the Lynch Communications System facility and the White Pine Power Project (WPPP)--would begin in the county over the same time period as M-X. Including WPPP and other, smaller projects, Baseline 2 (high-growth) employment in 1987 would be 5,800 jobs. Peak construction demand would be 75 percent above Baseline 2 employment in 1987.

Base operations would begin in 1985, with an initial staff of less than 50 persons. The phasing-in of operations personnel would be completed by 1989. Table 3.1.3.4-1 indicates that long-term direct employment at the base would be 5,600 persons, of which 82 percent would be military personnel.

Indirect employment would be generated in the county by spillover impacts from neighboring DDA counties, from DAA construction in White Pine County, from responding of project payrolls, and from base procurement of goods and services. Particularly in Ely, project-related investments by local, state, and federal governments and by private businesses would create additional short-term employment. Indirect employment would begin in 1982, would be inconsequential until 1984, peak at 6,300 jobs in 1988, and decline thereafter. The long-term level of indirect employment is projected at about 1,800 jobs in 1994. This number is relatively low because the base would provide most of its own support services.

Table 3.1.3.4-1 indicates that peak total employment by place of work would range from 9,000 to 14,000 jobs from 1986 to 1990. However, an equally important measure of local effects is employment change by place of residence, i.e., adjusting employment for cross-county commuting. In the case of White Pine County, the peak figure of 13,300 is adjusted upward to 13,800, indicating that about 500 workers employed in DDA construction in northeastern Nye County, northern Lincoln County, and western Millard County, would live in White Pine County (Table 3.1.3.4-2). This figure of 13,800 is about 460 percent above the trend growth projection. With either Alternative 3 or 5, 7,400 long-term jobs (including military positions) would be created for residents of White Pine County. This is almost 250 percent above the long-term trend-growth projection of 3,000 jobs in 1994. Under

Table 3.1.3.4-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN WHITE PINE

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH  
 BASE I AT BERYL, UT (IRON CO.)  
 BASE II AT ELY, NV (WHITE PINE CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	478	816	1784	2597	97	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	0	0	35	570	900	0	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
TOTAL DIRECT	0	0	657	2724	4221	7062	6212	5600	5600	5600	5600	5600	5600
INDIRECT	5	49	890	2915	4623	6287	5349	4025	3123	2044	1783	1774	1774
TOTAL	5	49	1547	5639	8844	13349	11561	9625	8723	7644	7383	7374	7374

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.4-2.

**EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN WHITE PINE**

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT BERYL, UT (IRON CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	8207	8221	8451	12582	14169	16031	15299	13711	12647	12771	12919	13014	13142
LF PARTICIPATION RATE	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
LABOR FORCE	3283	3288	3380	5033	5668	6412	6120	5484	5059	5108	5168	5206	5257
EMPLOYMENT-LF CONCEP	2984	2989	3073	4575	5152	5829	5563	4985	4644	4644	4697	4732	4778
UNEMPLOYMENT	299	299	307	458	516	583	557	499	461	464	471	474	479
UNEMPLOYMENT RATE	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10
RESIDENTIAL LF	98	99	101	151	170	192	184	165	152	153	155	156	158
--FOR CONSTRUCTION	30	30	30	45	51	58	55	49	46	46	47	47	47
--FOR OPERATIONS	20	20	20	30	34	38	37	33	30	31	31	31	32
--FOR IND. EMPLOYMEN	49	49	51	75	85	96	92	82	76	77	78	78	79
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	0	52	644	1073	2138	2873	321	60	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	6	5	41	710	996	60	0	0	0	0	0
BASE CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	29	182	1679	3678	4565	4565	4565	4565	4565	4565
OPERATIONS, CIVILIAN	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
INDIRECT EMPLOYMENT	5	49	890	2915	4623	6287	5349	4025	3123	2044	1783	1774	1774
TOTAL	5	101	1719	5901	9204	13765	11882	9746	8723	7644	7383	7374	7374
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	25	861	3157	4612	5125	1070	12	0	0	0	0	0
ASS. AND CKOUT LF	0	0	6	5	41	760	996	60	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	30	229	782	1002	1005	1004	1004	1004	1003
SECONDARY	0	8	271	1000	1550	2715	2717	2611	2590	2589	2589	2589	2589
ADDITIONAL INDIRECT	0	0	593	1930	3131	3750	2852	1650	773	0	0	0	0
TOTAL LF	0	32	1731	6092	9364	12578	8417	5335	4367	3594	3593	3593	3592
<b>PROJECTIONS WITH M-X</b>													
POPULATION	8207	8265	12301	26100	35482	46579	40950	33826	29721	27270	27417	27511	27638
CIV. LABOR FORCE	3283	3321	5111	11125	15031	18991	14536	10819	9426	8702	8761	8799	8849
EMPLOYMENT-LF CONCEP	2989	3091	4792	10446	14174	17915	13767	10166	8756	7723	7515	7541	7588
UNEMPLOYMENT	294	230	319	679	857	1076	769	653	670	979	1246	1258	1261
UNEMPLOYMENT RATE	9.00	6.90	6.30	6.10	5.70	5.70	5.30	6.00	7.10	11.30	14.20	14.30	14.30

SOURCE: HDR SCIENCES, 16-SEP-81

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other full deployment alternatives, with only DAA facility construction in White Pine County, only short-term boom-type growth would occur. With Alternatives 3 and 5, employment growth would be more rapid and much greater, but more stable in the long run.

Historically, the economy of the county has been dominated by mining and smelting. These industries exhibited employment losses from 1974-1979. Trend-growth projections assume a resumption of slow economic growth, but the inclusion of other projects would alter this fairly stagnant long-term picture. Employment forecasts which includes these projects in addition to M-X add about 2,800 more jobs in 1987, and about 1,800 more jobs after 1990. These trends indicate that White Pine County would not assimilate growth of the magnitude projected under M-X Alternatives 3 and 5 without significant structural change to the local economy. This could be particularly serious in the early years and would be worsened by the cumulative effects of other projects.

#### Labor Force Effects (3.1.3.4.2)

The labor market would be very tight in the short run, particularly in construction. With a relatively small existing labor force, significant in-migration of construction and operations personnel would be required. Some indirectly employed workers also would in-migrate from outside the county. Table 3.1.3.4-2 presents baseline employment data and impact estimates of employment, unemployment, and labor force in-migration for White Pine County under Alternative 3 for Baseline 1 (see ETR-2L for supporting data for other alternatives and for Baseline 2). Civilian in-migration figures are particularly important since they form the basis for civilian population growth, a critical element of the project's impact on community services and infrastructure and the local public sector. Total civilian M-X-related employment is calculated from direct and indirect labor demand (in Table 3.1.3.4.1) and adjusted to employment by place of residence. This figure peaks at 13,800 workers in 1987. In the same year, White Pine County's available labor force is projected at about 100 persons under Baseline 1 conditions and about 200 under Baseline 2 conditions. These figures include an estimate of persons who would likely remain unemployed even in an extremely tight labor market.

M-X labor force in-migration figures in Table 3.1.3.4-2 show the expected available labor pool under trend-growth conditions compared to M-X demand for civilian labor. In-migration figures show a cumulative civilian labor force in-migration would equal about 12,700 workers in 1987. Thus, through 1987, a total of 12,700 civilian workers would become residents in the county. These data also indicate rapid out-migration after 1987 as job opportunities diminish. These figures stabilize at about 3,600 persons by 1992 under both baseline growth scenarios. This is the estimated long run civilian worker in-migration into White Pine County under Alternatives 3 and 5. An additional 4,600 military personnel would be long-term in-migrants. Following peak in-migration, labor market stress would decline somewhat, unemployment rates would increase, and M-X-related escalation in construction wages would begin to decline.

#### **Milford (3.1.3.5)**

The Milford OB would be the second operating base under the Proposed Action and the first operating base under Alternatives 5 and 6. Beaver, Iron, and Millard

counties would receive employment impacts as a result of base construction and operation. In addition, Beaver and Millard counties would be in the Designated Deployment Area (DDA) under all project alternatives, including split deployment.

#### Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.5.1)

Project-related labor demands in Beaver County are presented in Tables 3.1.3.5-1 and 3.1.3.5-2 for the Proposed Action and Alternative 5. Alternative 6 impacts are very similar to those of Alternative 5 and are presented in tabular form in ETR-2B. Construction, assembly, and checkout of the second operating base under the Proposed Action would begin in 1984, peak in 1986 at 2,150 jobs, and be completed in 1988. A first operating base, as proposed under Alternatives 5 and 6, would entail a much larger work force for construction, assembly, and checkout (Table 3.1.3.5-2). For both these alternatives, base construction would begin in 1982, peak the following year at 2,940 jobs, and end in 1987. Assembly and checkout personnel would be needed from 1982 through 1990. From 1986 to 1989, 1,450 assembly and checkout jobs are projected under Alternative 5, and 1,250 under Alternative 6. This small difference is attributed to the different DDA construction sequences for the two options.

Under the Proposed Action and Alternative 6, construction, assembly, and checkout personnel requirements are identical. Alternative 5 requirements are slightly higher in 1982-1983 than the other two options due to alternate staffing of construction camps in the area. Under all three deployment options, construction is scheduled to begin in 1982, peak in 1985 at 1,800 jobs, and be completed the following year. Assembly and checkout of DDA facilities is expected to begin in 1984, peak in 1986 (at 800 jobs under the Proposed Action and Alternative 6 and 1,000 jobs under Alternative 5), and be completed in 1987.

Base operations would begin in 1985 under the Proposed Action, with only partial staffing until 1989. In that year, assembly and checkout would be complete and a full staff of 5,600 personnel would be required to operate the base. Under Alternatives 5 and 6, operation of the base would begin in 1983 with only a partial staff until 1987. In 1987, though construction and assembly and checkout would not yet be completed, a full staff of 7,700 personnel would be present to operate the base. Under all three deployment options, operations staffing levels are expected to remain constant through 1994 and for the operating life of the M-X project.

Impacts under the Proposed Action would be greatest when the full operating staff is present after 1989--5,600 direct jobs. Indirect employment would result from local suppliers expanding to meet demands of direct project employees. Indirect jobs would also be generated by the following situations: 1) local procurement of goods and services, 2) project-related investments undertaken by local, state, and federal governments and private businesses, and 3) the need to operate and maintain additional schools, highways, utilities, and other community infrastructure components. Indirect employment induced by M-X is projected to peak in 1987 at 3,600 jobs. As construction workers leave the area and operations personnel begin working, indirect employment is projected to decline. This is because construction workers are likely to be more dependent on local communities for goods and services than base personnel, who would be able to depend more on base facilities. In 1988, total direct and indirect labor requirements peak at 8,600 jobs. After that point, indirect jobs are expected to decline to a long-term level of

Table 3.1.3.5-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN BEAVER

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT MILFORD, UT (BEAVER CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS													
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
TECHNICAL FACILITIES														
CONSTRUCTION	107	442	924	1814	1100	0	0	0	0	0	0	0	0	
ASSEMBLY + CHECKOUT	0	0	25	25	800	325	0	0	0	0	0	0	0	
BASE														
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0	
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0	
OPERATIONS														
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290	
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275	
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035	
TOTAL DIRECT	107	442	1128	3747	4302	4220	5215	5600	5600	5600	5600	5600	5600	
INDIRECT	26	117	736	2175	3105	3624	3424	2911	2238	1231	982	971	971	
TOTAL	133	559	1864	5922	7407	7844	8639	8511	7838	6831	6582	6571	6571	
SOURCE: HDR SCIENCES, 16-SEP-81														
													CT1165	

SOURCE: HDR SCIENCES, 16-SEP-81

CT1166

Table 3.1.3.5-2.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN BEAVER

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH (L)  
 BASE I AT MILFORD, UT (BEAVER CO.)  
 BASE II AT ELY, NV (WHITE PINE CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	391	676	332	1823	1165	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	30	50	1003	333	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	1392	2936	2762	2618	1565	1052	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	50	200	500	900	1450	1450	1450	1450	350	0	0	0	0
OPERATIONS													
OFFICERS	0	10	34	224	487	610	610	610	610	610	610	610	610
ENLISTED PERSONNEL	0	27	148	1907	4342	5900	5900	5900	5900	5900	5900	5900	5900
CIVILIANS	0	2	52	480	848	1212	1212	1220	1220	1220	1220	1220	1220
TOTAL DIRECT	1833	3851	3858	8002	10860	10557	9172	9180	8080	7730	7730	7730	7730
INDIRECT	1049	2655	3679	5316	5506	4721	3612	2151	1540	1375	1350	1349	1349
TOTAL	2882	6506	7537	13318	16366	15278	12784	11331	9620	9105	9080	9079	9079
SOURCE: HDR SCIENCES, 16-SEP-81													CT1171

about 1,000 jobs. A long-term total of 6,600 direct and indirect jobs consequently is projected for the county.

The total direct impacts under Alternatives 5 and 6 are larger than for the Proposed Action. Peak activity is reached in 1986 at 10,850 jobs under Alternative 5 and 10,400 jobs under Alternative 6. In both instances, indirect employment also peaks that year, causing total (direct and indirect) M-X-related employment levels to peak at 16,350 and 15,800 jobs for Alternatives 5 and 6, respectively. As construction workers leave, indirect jobs are expected to decrease to about 1,350 jobs under both alternatives. The long-term total employment due to Alternative 5 or 6 is projected at 9,100 jobs through the mid-1990s.

Tables 3.1.3.5-3 and 3.1.3.5-4 present employment and labor force impacts on the basis of place-of-residence, rather than place-of-work as in Tables 3.1.3.5-1 and 3.1.3.5-2. Differences in the data arise from the possibility of cross-county commuting. These impacts will be discussed in terms of their labor force effects in the following section (Labor Force Effects).

M-X-related labor requirements (on a place-of-residence basis) in Iron County are presented in Table 3.1.3.5-5 for Alternative 5. Impacts for the Proposed Action and Alternative 6, by place-of-work and by place-of-residence, are less than for Alternative 5, and are presented in tabular form in ETR-2E. No direct jobs are projected in the county, under any of the deployment options that site an OB at Milford. A significant number of indirect jobs are projected on the assumption that several hundred construction and operations personnel working at the base and technical facilities in Beaver and Millard counties would live in Iron County. These workers would commute to their jobs in the adjacent counties, but would spend much of their income on goods and services in Iron County. A breakdown of the number of M-X workers who would reside in the county is discussed in greater detail in the following section (Labor Force Effects).

Under the Proposed Action, indirect employment would peak at 800 jobs in 1987 and gradually decline until 1991. After that, total M-X-related employment would remain at 650 indirect jobs for the operating life of the M-X project. Under both Alternatives 5 and 6, indirect employment would peak at 1,500 workers in 1987. Indirect jobs would decline after that to about 900 jobs in 1992. They would remain at that level throughout the operation of the M-X system.

Projected labor demand by place-of-residence in Millard County is presented in Table 3.1.3.5-6 for Alternative 5. As for Iron County, the impacts of other alternatives are presented in the supporting data (see ETR-2H). Construction of technical facilities is scheduled to begin in 1982 under all three deployment plans and to be completed in 1987 for the Proposed Action and Alternative 6, and in 1989 under Alternative 5. Assembly and checkout would last from 1982 to 1989 under Alternative 5. Under the other two deployment options, because of the sequence of ODA activity, assembly and checkout labor demand in Millard County would last for only five years, from 1984 through 1988. Total direct employment by place-of-work (see ETR-2H) would peak in 1985 at 5,025 jobs under Alternative 5 and in 1986 at 3,850 jobs under the Proposed Action and Alternative 6. The number of indirect jobs under each option would peak in the same year as direct employment. Total direct and indirect employment (by place-of-work) is projected to peak at 6,100 jobs in 1985 under Alternative 5 and under the other deployment options at nearly 5,000

Table 3.1.3.5-3.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN BEAVER

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COYOTE SPRING, NV (CLARK CO.)  
BASE II AT MILFORD, UT (BEAVER CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6548	8663	9835	10993	11983	10023	9715	9814	9965	10130	10291	10455	10566
LF PARTICIPATION RATE	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80
LABOR FORCE	2934	3881	4406	4925	5368	4490	4352	4397	4464	4538	4610	4684	4734
EMPLOYMENT: LF CONCEPT	2749	3637	4128	4615	5030	4207	4078	4120	4183	4252	4320	4389	4435
UNEMPLOYMENT	185	244	278	310	338	283	274	277	281	286	290	295	299
UNEMPLOYMENT RATE	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
RESIDENTIAL LF	67	89	101	113	123	103	100	101	103	104	106	108	109
--FOR CONSTRUCTION	20	27	30	34	37	31	30	30	31	31	32	32	33
--FOR OPERATIONS	13	18	20	23	25	21	20	20	21	21	21	22	22
--FOR IND. EMPLOYMENT	34	45	51	57	62	52	50	51	51	52	53	54	54
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	105	435	926	1828	1178	145	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	25	23	728	373	53	0	0	0	0	0	0
BASE CONSTRUCTION	0	0	125	1314	1509	1329	503	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	35	0	0	0	0	0	0	0
OPERATIONS: MILITARY	0	0	0	26	164	1511	3310	4109	4109	4109	4109	4109	4109
OPERATIONS: CIVILIAN	0	0	0	2	48	200	614	776	776	776	776	776	776
INDIRECT EMPLOYMENT	26	117	736	2175	3105	3624	3424	2911	2238	1231	982	971	971
TOTAL	132	552	1812	5367	6731	7217	7904	7796	7123	6116	5867	5856	5856
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	92	444	1110	3378	2880	1569	514	0	0	0	0	0	0
ASS. AND CKOUT LF	0	0	25	23	728	408	53	0	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	23	180	594	756	756	755	755	755	754
SECONDARY	29	139	354	1073	1212	1394	1984	2253	2253	2253	2253	2253	2253
ADDITIONAL INDIRECT	0	0	363	1142	1943	2331	1628	885	211	0	0	0	0
TOTAL LF	121	583	1851	5616	6786	5881	4773	3894	3220	3008	3008	3007	3007
<b>PROJECTIONS WITH M-X</b>													
POPULATION	6758	9670	13634	22827	27442	26836	26638	25395	23301	22763	22923	23086	23196
CIV. LABOR FORCE	3055	4464	6257	10541	12155	10371	9125	8291	7684	7547	7618	7691	7741
EMPLOYMENT: LF CONCEPT	2880	4188	5940	9956	11597	9914	8672	7807	7198	6259	6078	6136	6183
UNEMPLOYMENT	175	276	317	585	558	457	453	484	486	1288	1540	1555	1558
UNEMPLOYMENT RATE	5.70	6.20	5.10	5.60	4.60	4.40	5.00	5.80	6.30	17.10	20.20	20.20	20.10

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.5-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN BEAVER

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT MILFORD, UT (BEAVER CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6548	8663	9835	10993	11983	10023	9715	9814	9965	10130	10291	10455	10566
LF PARTICIPATION RATE	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80	44.80
LABOR FORCE	2934	3881	4406	4925	5368	4490	4352	4397	4464	4538	4610	4684	4734
EMPLOYMENT: LF CONCEPT	2749	3637	4128	4615	5030	4207	4078	4120	4183	4252	4320	4389	4435
UNEMPLOYMENT	185	244	278	310	338	283	274	277	281	286	290	295	299
UNEMPLOYMENT RATE	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
RESIDENTIAL LF	67	89	101	113	123	103	100	101	103	104	106	108	109
--FOR CONSTRUCTION	20	27	30	34	37	31	30	30	31	31	32	32	33
--FOR OPERATIONS	13	18	20	23	25	21	20	20	21	21	21	22	22
--FOR IND. EMPLOYMENT	34	45	51	57	62	52	50	51	51	52	53	54	54
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	346	629	382	1856	1098	125	170	12	0	0	0	0	0
SHELTER ASS. & CKOUT	1	10	36	145	1020	269	50	39	0	0	0	0	0
BASE CONSTRUCTION	974	2055	1933	1833	1096	736	0	0	0	0	0	0	0
BASE ASS. & CKOUT	35	140	350	630	1015	1015	1015	1015	245	0	0	0	0
OPERATIONS, MILITARY	0	33	164	1918	4346	5859	5859	5859	5859	5859	5859	5859	5859
OPERATIONS, CIVILIAN	0	2	39	360	636	909	909	915	915	915	915	915	915
INDIRECT EMPLOYMENT	1049	2655	3679	5316	5506	4721	3612	2151	1540	1375	1350	1349	1349
TOTAL	2405	5523	6583	12057	14717	13634	11615	9991	8559	8149	8124	8123	8123
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	1414	2888	2484	3972	2343	902	152	0	0	0	0	0	0
ASS. AND CKOUT LF	36	150	386	775	2035	1284	1065	1054	245	0	0	0	0
CIVILIAN OPS	0	0	19	337	611	888	889	895	894	894	894	893	893
SECONDARY	452	963	979	2525	3651	3796	3494	3446	3194	3117	3117	3117	3117
ADDITIONAL INDIRECT	603	1734	2740	2996	2201	1320	488	0	0	0	0	0	0
TOTAL LF	2505	5735	6608	10606	10842	8192	6089	5395	4333	4011	4011	4010	4010
<b>PROJECTIONS WITH M-X</b>													
POPULATION	12073	21885	26393	38048	42603	37244	31745	29940	28085	27633	27793	27956	28056
CIV. LABOR FORCE	5439	9616	11014	15531	16210	12682	10441	9791	8798	8550	8621	8694	8744
EMPLOYMENT: LF CONCEPT	5154	9127	10548	14754	15401	11982	9834	8251	6883	6542	6585	6653	6699
UNEMPLOYMENT	285	489	466	777	809	700	607	1540	1915	2008	2036	2041	2045
UNEMPLOYMENT RATE	5.20	5.10	4.20	5.00	5.00	5.50	5.80	15.70	21.80	23.50	23.60	23.50	23.40

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.5-5.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN IRON

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT MILFORD, UT (BEAVER CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	18448	19066	19753	20500	21033	21497	21991	22493	23006	23427	23864	24281	24677
LF PARTICIPATION RATE	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00
LABOR FORCE	8117	8389	8691	9020	9255	9459	9676	9897	10123	10308	10500	10684	10858
EMPLOYMENT: LF CONCEPT	7638	7894	8179	8488	8709	8901	9105	9313	9525	9700	9881	10053	10217
UNEMPLOYMENT	479	495	512	532	546	558	571	584	598	608	619	631	641
UNEMPLOYMENT RATE	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90
RESIDENTIAL LF	154	159	165	171	176	180	184	188	192	196	200	203	206
--FOR CONSTRUCTION	46	48	50	51	53	54	55	56	58	59	60	61	62
--FOR OPERATIONS	31	32	33	34	35	36	37	38	38	39	40	41	41
--FOR IND. EMPLOYMENT	77	80	83	86	88	90	92	94	96	98	100	101	103
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	39	68	33	182	117	0	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	3	5	100	33	0	0	0	0	0	0	0
BASE CONSTRUCTION	348	734	691	655	391	263	0	0	0	0	0	0	0
BASE ASS. & CKOUT	13	50	125	225	363	363	363	363	88	0	0	0	0
OPERATIONS, MILITARY	0	4	18	213	483	651	651	651	651	651	651	651	651
OPERATIONS, CIVILIAN	0	1	13	120	212	303	303	305	305	305	305	305	305
INDIRECT EMPLOYMENT	282	700	843	1219	1487	1535	1315	1231	1030	924	908	907	907
TOTAL	681	1556	1726	2619	3152	3147	2632	2549	2074	1880	1864	1863	1863
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	370	819	733	854	495	227	0	0	0	0	0	0	0
ASS. AND CKOUT LF	13	50	128	230	463	396	363	363	88	0	0	0	0
CIVILIAN OPS	0	0	0	86	177	267	266	267	267	266	265	264	264
SECONDARY	119	273	277	479	609	628	547	547	461	433	433	433	432
ADDITIONAL INDIRECT	96	372	509	701	853	885	738	650	526	444	426	424	423
TOTAL LF	598	1515	1647	2350	2597	2403	1913	1827	1341	1143	1124	1121	1118
<b>PROJECTIONS WITH M-X</b>													
POPULATION	19456	21880	23044	25571	27329	27979	27512	27726	27329	27316	27691	28099	28489
CIV. LABOR FORCE	8715	9904	10338	11370	11851	11862	11589	11724	11464	11451	11624	11804	11976
EMPLOYMENT: LF CONCEPT	8319	9447	9886	10894	11378	11397	11086	11211	10948	10929	11093	11255	11429
UNEMPLOYMENT	396	457	452	476	473	465	503	513	516	522	531	539	547
UNEMPLOYMENT RATE	4.50	4.60	4.40	4.20	4.00	3.90	4.30	4.40	4.50	4.60	4.60	4.60	4.60

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.5-6.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN MILLARD

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH  
 BASE I AT MILFORD, UT (BEAVER CO.)  
 BASE II AT ELY, NV (WHITE PINE CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	336	879	1165	3975	1655	1248	1701	118	0	0	0	0	0
ASSEMBLY + CHECKOUT	10	100	120	1050	2178	26	498	386	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	0	0	0	0	0	0	0	0	0	0
ENLISTED PERSONNEL	0	0	0	0	0	0	0	0	0	0	0	0	0
CIVILIANS	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DIRECT	346	979	1285	5025	3833	1274	2199	504	0	0	0	0	0
INDIRECT	71	218	320	1097	1078	616	863	525	97	4	0	0	0
TOTAL	417	1197	1605	6122	4911	1890	3062	1029	97	4	0	0	0

SOURCE: HDR SCIENCES, 16-SEP-81

CT1181

jobs in 1986. No long-term direct or indirect employment is expected in the county after 1991.

#### Labor Force Effects (3.1.3.5.2)

County labor demand would be significantly increased by M-X. Skilled labor would be in very short supply, particularly in the construction phase. Due to shortages of locally available workers and higher wages associated with M-X-related jobs, a significant labor in-migration would occur. Under the Proposed Action, total M-X-related employment by place-of-residence is projected to peak in 1988 at 7,900 workers and to stabilize at 5,850 by 1992 (Table 3.1.3.5-2). Employment would continue at that level for the operating life of the M-X system. Under Alternatives 5 and 6, total related employment would peak in 1986 at 14,700 and 14,300 workers, respectively (Table 3.1.3.5-4 and ETR-2B). By 1992, total employment is projected to drop to 8,100 workers under both alternatives and should continue at that level as long as the base is in operation.

Table 3.1.3.5-5 shows that the available resident labor force is relatively small (50 persons). A large civilian labor force in-migration would be required for M-X deployment. The in-migration projections, when added to estimates of military personnel and their dependents, form the basis for population growth projections which drive impacts on local infrastructure.

In-migration is expected to reach a peak in 1986 at 6,850 workers for the Proposed Action, 10,900 for Alternative 5, and 10,475 for Alternative 6. After that, workers would begin to leave as demands for civilian workers decrease. This out-migration would continue until 1991. Unemployment could be significantly higher in the long-term with M-X than without it. This would be due primarily to large numbers of potential workers among military dependents, many of whom would be unable to find local employment. While Tables 3.1.3.5-3 and 3.1.3.5-4 project unemployment rates in excess of 25 percent of the labor force, a more likely result is that these dependents would simply drop out of the labor force when job search efforts failed. This would reduce measured unemployment, but would replace it with disguised unemployment or underemployment.

The previous discussion relates to M-X impacts compared to trend growth projections for Beaver County. Cumulative impacts of M-X deployment plus other projects likely to occur in the next decade in Beaver County are shown in high-growth employment population and labor force tables in ETR-2B. M-X labor force in-migration under high-growth conditions is expected to be slightly lower than that projected for trend-growth. Unemployment rates are expected to be slightly lower with the addition of other projects in the county.

Employment, population, and labor force projections for Iron County with and without M-X are presented in Table 3.1.3.5-5 for Alternative 5. M-X-related employment peaks in 1987 for the Proposed Action and Alternative 6 at 1,550 and 3,050 workers, respectively. Under Alternative 5, employment is expected to peak at 3,150 workers in 1986-1987. Labor force in-migration would not be as great as in Beaver County. The effects of M-X deployment are projected to reduce unemployment rates below their baseline levels throughout the construction and operations phases. High-growth baseline and impact projections are presented in ETR-2E.

Employment, population, and labor force projections with and without the M-X project are shown in Table 3.1.3.5-6 for Millard County under Alternative 5. M-X-related employment peaks in 1986 at 4,900 workers for the Proposed Action and Alternative 6. Under Alternative 5, 5,600 workers would be required during the peak year (1985). In-migration above the number of available jobs is expected to take place during the construction buildup period, causing the unemployment rate to increase from the 5.0 percent projected without M-X to 8.7 percent under Alternative 5. As out-migration takes place, unemployment rates are expected to decline to slightly below the projected baseline value. After 1990, no employment and labor force effects are projected for the county. High growth impacts are presented in the employment, population, and labor force projections tables in ETR-2H.

### **Clovis (3.1.3.6)**

Clovis is projected as a first operating base location under full deployment in Texas/New Mexico, and a second operating base under split deployment. Base-associated employment as well as some spillover employment from ODA construction in other counties represent the only sources of M-X-related employment in Curry County. No ODA facilities would be located in the county.

#### Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.6.1)

Principal employment effects result from the project's demand for construction and operations labor. Tables 3.1.3.6-1 and 3.1.3.6-2 present direct, indirect, and total labor requirements for the two project alternatives which would site a base in Curry County. Table 3.1.3.6-1 indicates that construction of the first operating base under full deployment (Alternative 7) would begin in 1982 and last for six years, peaking at 2,760 jobs in 1984. This peak demand figure would be about three times the 1979 employment level in the county's construction industry. The peak construction demand of 2,760 jobs would be about 19 percent of baseline employment in the county in 1984. An employment demand of this magnitude would induce short-term stress in the county's building trades industry creating shortages of skilled workers, wage inflation, and in-migration of workers into the county. Operation of the base would begin in 1983, with full base staffing of 7,730 persons by 1987 (Table 3.1.3.6-1). Under split deployment (Alternative 8), a second operating base would be sited at Clovis, where total direct labor required would be much less, particularly over the initial buildup phase (see Table 3.1.3.6-2). Under split deployment, several hundred site activation task force (SATAF) and Corps of Engineers (COE) personnel would be located in Clovis.

Large numbers of jobs indirectly related to M-X would also be created in the county. The principal source would be economic expansion generated by the spending and respending of project payrolls earned by direct employees. There would also be local procurement of goods and services from area suppliers, who in turn would expand employment to meet the increased demand. Project-related investments by governments and private business would also induce the growth of secondary employment. Table 3.1.3.6-1 indicates that indirect employment would peak at 7,300 jobs in 1986 and decline thereafter, reaching about 2,000 jobs in 1991.

Table 3.1.3.6-1 indicates that peak total employment by place-of-work in the county is forecast at 16,500 jobs in 1986. Over the long run, the M-X-induced

Table 3.1.3.6-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN CURRY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
 BASE I AT CLOVIS, NM (CURRY CO.)  
 BASE II AT DALHART, TX (HARTLEY CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	0	0	0	0	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	1392	2755	2762	2618	1565	1052	0	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	50	200	500	900	1250	1250	1250	1250	250	0	0	0	0
OPERATIONS													
OFFICERS	0	10	34	224	487	610	610	610	610	610	610	610	610
ENLISTED PERSONNEL	0	27	148	1907	4342	5900	5900	5900	5900	5900	5900	5900	5900
CIVILIANS	0	2	52	480	848	1212	1212	1220	1220	1220	1220	1220	1220
TOTAL DIRECT	1442	2994	3496	6129	8492	10024	8972	8980	7980	7730	7730	7730	7730
INDIRECT	1264	3222	4786	6795	7307	6475	4958	3215	2266	2012	1984	1983	1983
TOTAL	2706	6216	8282	12924	15799	16499	13930	12195	10246	9742	9714	9713	9713
SOURCE: HDR SCIENCES, 16-SEP-81	CT1173												

Table 3.1.3.6-2.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN CURRY

ALTERNATIVE 8B: SPLIT DEPLOYMENT (35/65) - TEXAS/NEW MEXICO  
SPLIT BASE II AT CLOVIS, NM (CURRY CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS													
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
TECHNICAL FACILITIES														
CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0	
ASSEMBLY + CHECKOUT	338	517	656	461	406	406	338	213	138	0	0	0	0	
BASE														
CONSTRUCTION	1392	2755	2762	2618	1565	1052	0	0	0	0	0	0	0	
ASSEMBLY AND CHECKOUT	25	100	250	450	750	1050	1000	1000	202	0	0	0	0	
OPERATIONS														
OFFICERS	0	0	0	5	12	172	291	316	316	316	316	316	316	
ENLISTED PERSONNEL	0	0	0	24	170	1777	3739	4646	4646	4646	4646	4646	4646	
CIVILIANS	0	0	0	2	64	267	819	1030	1030	1030	1030	1030	1030	
TOTAL DIRECT	1755	3372	3668	3560	2967	4724	6187	7205	6332	5992	5992	5992	5992	
INDIRECT	764	1758	2652	4009	5268	6210	5772	5179	4214	2960	2666	2659	2659	
TOTAL	2519	5130	6320	7569	8235	10934	11959	12384	10546	8952	8658	8651	8651	
													CT11175	

SOURCE: HDR SCIENCES, 16-SEP-81

CT1175

change in employment for Alternative 7 would equal 9,700 jobs. No other large projects are currently scheduled in Curry County. Peak M-X-related employment would be 12,400 jobs in 1989 under Alternative 8.

Technical facilities construction would begin in 1982 in Roosevelt County, peak in 1985, and be completed two years later under the full deployment alternative. Under split deployment, construction would begin in 1983, peak in 1986, and finish the following year. Supporting data in ETR-3C present direct, indirect, and total labor requirements by place of work for the two project alternatives. Alternative 7 would create a peak level of 6,050 direct jobs in 1986 (although construction employment peaks one year earlier at 3,300 jobs). The number of indirect jobs induced by M-X activity would also peak in 1986 at 2,300 jobs, bringing the peak total employment level to more than 8,300 jobs. The peak level of total employment under split deployment (Alternative 8) is also projected to occur in 1986, when 2,800 jobs are forecast. More than 1,900 jobs would be direct and 850 jobs would be indirect, induced mainly by the spending and respending of project payrolls. Due to the large number of construction workers required during 1986, total employment will peak during that year, although the number of assembly and checkout workers and indirect jobs will peak in 1987. More indirect jobs are expected in 1987. There will be almost 500 less direct jobs that year because assembly and checkout workers are predicted to earn more money than construction workers and therefore are anticipated to inject more money into the local economies.

#### Labor Force Effects (3.1.3.6.2)

Tables 3.1.3.6-3 and 3.1.3.6-4 present baseline and impact projects by place-of-residence. The University of New Mexico, Bureau of Business and Economic Research projects very little growth in Curry County through 1994. Growth induced by the full (Alternative 7) and split (Alternative 8) deployment options would significantly alter this forecast. Because Cannon Air Force Base is already located in the county, much of the infrastructure needed to serve a major defense installation is already in place. However, a significant amount of rapid expansion, especially in existing service and trade sectors would result from M-X deployment. Skilled labor, including ironworkers and operating engineers, would be in very high demand during peak construction activity creating labor shortages and short run wage escalation.

Almost 15,600 county residents are expected to be employed as a result of the full deployment alternative in 1986, bringing 11,450 additional workers into the civilian labor force that year.

The numbers of M-X-related jobs available to civilians would decrease significantly in the following years and many workers would leave the county. This out-migration of civilian workers would occur after 1986. Out-migration would continue until 1991 when only the 3,700 civilians holding operations and secondary jobs remained. Over 5,800 military operations personnel are also expected to reside in the county in the long run forecast (1990-1994).

The unemployment rate is expected to remain below the baseline projection until 1989. After that year, unemployment rates are projected to increase, due to

Table 3.1.3.6-3.

**EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS.**  
WITH AND WITHOUT M-X, IN CURRY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
BASE I AT CLOVIS, NM (CURRY CO.)  
BASE II AT DALHART, TX (HARTLEY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	43870	44010	44150	44290	44310	44330	44350	44370	44400	44310	44230	44150	44070
LF PARTICIPATION RATE	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90
LABOR FORCE	15311	15359	15408	15457	15464	15471	15478	15485	15496	15464	15436	15408	15380
EMPLOYMENT-LF CONCEP	14392	14438	14484	14530	14536	14543	14549	14556	14566	14536	14510	14484	14458
UNEMPLOYMENT	919	921	924	927	928	928	929	929	930	928	926	924	922
UNEMPLOYMENT RATE	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
RESIDENTIAL LF	306	307	308	309	308	309	310	310	310	309	309	308	308
--FOR CONSTRUCTION	92	92	92	93	93	93	93	93	93	93	93	92	92
--FOR OPERATIONS	61	61	62	62	62	62	62	62	62	62	62	62	62
--FOR IND. EMPLOYMENT	153	154	154	155	155	155	155	155	155	155	154	154	154
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	99	295	601	984	904	357	146	105	0	0	0	0	0
SHELTER ASS. & CKOUT	2	15	38	169	543	224	92	86	0	0	0	0	0
BASE CONSTRUCTION	974	1929	1933	1833	1096	736	0	0	0	0	0	0	0
BASE ASS. & CKOUT	35	140	350	630	875	875	875	875	175	0	0	0	0
OPERATIONS, MILITARY	0	33	164	1918	4346	5859	5859	5859	5859	5859	5859	5859	5859
OPERATIONS, CIVILIAN	0	1	31	288	509	727	727	732	732	732	732	732	732
INDIRECT EMPLOYMENT	1264	3222	4786	6795	7307	6475	4958	3215	2266	2012	1984	1983	1983
TOTAL	2374	5635	7903	12617	15580	15254	12656	10872	9032	8603	8575	8574	8574
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	1067	2317	2654	2961	2073	1087	58	13	0	0	0	0	0
ASS. AND CKOUT LF	37	155	388	799	1418	1099	967	961	175	0	0	0	0
CIVILIAN OPS	0	0	0	226	447	665	665	670	670	670	670	670	670
SECONDARY	344	786	1023	2159	3289	3680	3317	3304	3055	3000	3000	3001	3001
ADDITIONAL INDIRECT	798	2353	3704	4711	4239	3078	1890	159	0	0	0	0	0
TOTAL LF	2245	5612	7768	10856	11465	9610	6897	5107	3900	3671	3671	3671	3671
<b>PROJECTIONS WITH M-X</b>													
POPULATION	49188	57812	63963	74001	78446	76481	69974	64152	61715	61185	61106	61026	60946
CIV LABOR FORCE	17556	20971	23177	26313	26929	25081	22375	20592	19396	19135	19107	19079	19052
EMPLOYMENT-LF CONCEP	16766	20040	22223	25229	25770	23938	21347	19569	17738	17280	17226	17199	17173
UNEMPLOYMENT	790	931	954	1084	1159	1143	1028	1023	1658	1855	1881	1880	1879
UNEMPLOYMENT RATE	4.50	4.40	4.10	4.10	4.30	4.60	4.60	5.00	8.50	9.70	9.80	9.90	9.90

SOURCE: MDR SCIENCES, 16-SEP-81

CT1155



Table 3.1.3.6-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN CURRY

ALTERNATIVE 8B: SPLIT DEPLOYMENT (35/65) - TEXAS/NEW MEXICO  
SPLIT BASE II AT CLOVIS, NM (CURRY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	43870	44010	44150	44290	44310	44330	44350	44370	44400	44310	44230	44150	44070
LF PARTICIPATION RATE	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90	34.90
LABOR FORCE	15311	15359	15408	15457	15464	15471	15478	15485	15496	15464	15436	15408	15380
EMPLOYMENT: LF CONCEPT	14392	14438	14484	14530	14536	14543	14549	14556	14566	14536	14510	14484	14458
UNEMPLOYMENT	919	921	924	927	928	928	929	929	930	928	926	924	922
UNEMPLOYMENT RATE	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
RESIDENTIAL LF	306	307	308	309	309	309	310	310	310	309	309	308	308
--FOR CONSTRUCTION	92	92	92	93	93	93	93	93	93	93	93	92	92
--FOR OPERATIONS	61	61	62	62	62	62	62	62	62	62	62	62	62
--FOR IND. EMPLOYMENT	153	154	154	155	155	155	155	155	155	155	154	154	154
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	11	153	215	532	543	68	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	339	525	679	491	753	660	395	213	138	0	0	0	0
BASE CONSTRUCTION	974	1929	1933	1833	1096	736	0	0	0	0	0	0	0
BASE ASS. & CKOUT	18	70	175	315	525	735	700	700	141	0	0	0	0
OPERATIONS: MILITARY	0	0	0	26	164	1754	3627	4466	4466	4466	4466	4466	4466
OPERATIONS: CIVILIAN	0	0	0	1	38	160	491	618	618	618	618	618	618
INDIRECT EMPLOYMENT	764	1758	2652	4009	5268	6210	5772	5179	4214	2960	2666	2659	2659
TOTAL	2105	4433	5654	7207	8386	10323	10985	11176	9577	8044	7749	7742	7742
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	971	2162	2235	2470	1680	773	0	0	0	0	0	0	0
ASS. AND CKOUT LF	18	78	198	345	872	989	757	700	141	0	0	0	0
CIVILIAN OPS	0	0	0	0	0	98	429	556	556	556	556	556	556
SECONDARY	485	969	1101	1131	1082	1607	2278	2640	2427	2311	2311	2311	2311
ADDITIONAL INDIRECT	169	723	1496	2826	4132	4625	3610	2703	1932	784	489	483	483
TOTAL LF	1643	3930	5029	6771	7765	8092	7074	6599	5056	3651	3356	3350	3350
<b>PROJECTIONS WITH M-X</b>													
POPULATION	47822	53276	56805	61612	65328	69811	69668	68716	64563	59910	58849	58747	58668
CIV. LABOR FORCE	16954	19290	20438	22228	23229	23563	22552	22084	20551	19115	18792	18758	18731
EMPLOYMENT: LF CONCEPT	16497	18871	20138	21711	22759	23112	21907	21266	19677	18115	17794	17761	17734
UNEMPLOYMENT	457	419	300	517	470	451	645	818	874	1000	998	997	997
UNEMPLOYMENT RATE	2.70	2.20	1.50	2.30	2.00	1.90	2.90	3.70	4.30	5.20	5.30	5.30	5.30

SOURCE: HDR SCIENCES, 16-SEP-81

CT1157

the significant reduction of indirect M-X jobs in the county and significant numbers of labor force participants among dependents of OB personnel under Alternative 8.

Under split deployment, M-X employment by place-of-residence would peak in 1989, providing jobs for 11,200 persons (Table 3.1.3.6-4). Civilian labor force in-migration is expected to peak two years earlier at 8,100 persons as a result of heavy construction activity anticipated during 1987. The total employment peak is expected two years after the civilian labor force in-migration peak since the increase in the number of military operations personnel between 1987 and 1989 is greater than the projected decrease due to out-migration of construction workers.

An increase in the county unemployment rate over the baseline projection is not expected under the split deployment alternative.

Only minor population and employment increases are expected in Roosevelt County between 1982 and 1994 in the baseline projection presented in Table 3.1.3.6-5. These data indicate that county population and employment levels would increase significantly due to M-X deployment under either Alternative 7 or 8. (Additional data on Alternative 8 impacts are found in ETR-3C.) Rapid expansion of the trade and services sectors, temporary labor shortages, and wage escalation are expected to result from M-X deployment, although these impacts are not expected to be as great as those anticipated in Curry County. Most of these impacts would occur in the city of Portales. M-X-related employment would peak in 1986 under Alternative 7, providing 8,150 persons with work and inducing nearly 8,100 persons to in-migrate into the county in search of jobs. The number of available jobs would decrease significantly in the following years inducing rapid out-migration of workers. Between 1986 and 1991, nearly 7,000 workers would leave the county, two-thirds of whom would out-migrate during the first year.

Split deployment impacts peak in 1986 at 3,100 workers inducing 3,300 persons to in-migrate into the county in search of work. The influx of additional workers is expected to increase unemployment rates slightly during the construction period. As the number of available jobs decreases after 1986, out-migration would occur and the unemployment rates eventually would fall to about the same level as those anticipated under the baseline projection, though there may be a lag until the number of available workers adjusts to long-term demand. About 1,525 persons living in the county would be employed in the long run in operations and indirect jobs. About 500 of these would be off-base military personnel.

#### **Dalhart (3.1.3.7)**

Dalhart would be the location of the second operating base under Alternative 7 (full deployment in Texas/New Mexico). Operations and construction employment under this alternative, as with split deployment, would significantly alter the size and structure of the small, agriculturally-dominated economies in Dallam and Hartley counties. Split deployment would substantially reduce impacts, since only DDA facilities construction would create jobs. With split deployment, however, the decline in employment after the 4-5 year boom would not be moderated by continuing base employment.

Table 3.1.3.6-5.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN ROOSEVELT

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
BASE I AT CLOVIS, NM (CURRY CO.)  
BASE II AT DALHART, TX (HARTLEY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	16610	16670	16730	16800	16870	16950	17030	17110	17200	17270	17350	17430	17510
LF PARTICIPATION RATE	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00
LABOR FORCE	7142	7168	7194	7224	7254	7289	7323	7357	7396	7426	7461	7495	7529
EMPLOYMENT-LF CONCEP	6864	6889	6913	6942	6971	7004	7037	7070	7108	7136	7170	7203	7236
UNEMPLOYMENT	278	279	281	282	283	285	286	287	288	290	291	292	293
UNEMPLOYMENT RATE	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90	3.90
RESIDENTIAL LF	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR OPERATIONS	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR IND. EMPLOYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	144	651	1505	2592	2350	508	0	0	0	0	0	0	0
SHELTER ASS. & CKOUT	7	70	99	739	2129	364	0	0	0	0	0	0	0
BASE CONSTRUCTION	278	551	552	524	313	210	0	0	0	0	0	0	0
BASE ASS. & CKOUT	10	40	100	180	250	250	250	250	50	0	0	0	0
OPERATIONS, MILITARY	0	4	18	213	483	651	651	651	651	651	651	651	651
OPERATIONS, CIVILIAN	0	1	21	192	339	485	485	488	488	488	488	488	488
INDIRECT EMPLOYMENT	222	630	1024	1736	2275	1527	924	794	649	583	573	572	572
TOTAL	662	1946	3320	6176	8140	3996	2310	2183	1838	1722	1712	1711	1711
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	460	1306	2236	3387	2895	781	0	0	0	0	0	0	0
ASS. AND CKOUT LF	17	110	199	919	2379	614	250	250	50	0	0	0	0
CIVILIAN OPS	0	1	21	192	339	485	485	488	488	488	488	488	488
SECONDARY	149	444	779	1540	2041	983	626	627	565	549	549	549	549
ADDITIONAL INDIRECT	86	226	316	338	427	645	367	235	147	95	85	84	84
TOTAL LF	712	2087	3551	6376	8081	3507	1727	1600	1250	1132	1122	1122	1122
<b>PROJECTIONS WITH M-X</b>													
POPULATION	17827	20417	23273	28941	32988	25150	21725	21375	20813	20619	20665	20744	20824
CIV. LABOR FORCE	7854	9255	10745	13600	15335	10796	9050	8957	8646	8558	8583	8617	8651
EMPLOYMENT-LF CONCEP	7525	8831	10215	12905	14628	10349	8696	8602	8295	8207	8230	8233	8296
UNEMPLOYMENT	329	424	530	695	707	447	354	355	351	351	353	354	355
UNEMPLOYMENT RATE	4.20	4.60	4.90	5.10	4.60	4.10	3.90	4.00	4.10	4.10	4.10	4.10	4.10

SOURCE: HDR SCIENCES, 16-SEP-81

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### Direct, Indirect, and Total M-X-Related Employment Effects (3.1.3.7.1)

Principal employment effects result from the project's demand for construction and operations labor. Table 3.1.3.7-1 presents direct, indirect, and total labor requirements for the base and DDA construction in Hartley County. Dallam County would also be the site of much DDA construction. Moore County would receive spillover growth in direct employment from both Dallam and Hartley counties. Moore County would also be affected by growth of supplier industries in response to demands for goods and services by direct project workers. Under full deployment, construction of DDA facilities is projected to begin in 1983 and run seven years in Dallam County and five in Hartley County. Peak DDA construction employment of 3,800 jobs in Dallam County in 1987 and of 1,700 jobs in Hartley County in 1986 is projected. Base construction would occur at the same time as DDA construction. Combined peak DDA and base construction requirements would equal 3,900 jobs in Hartley County in 1986. This is more than two-and-one-half times the 1979 total employment (by place-of-work) of 1,500 for Hartley County. The peak construction impact of 3,800 jobs in Dallam County would be 48 times as large as 1979 employment of 80 jobs in contract construction. For either county separately or for the general area, employment demand of this scale would create significant stress in the building trades industry, inducing skilled labor shortages, wage escalation, and large scale in-migration of workers.

Data in ETR-3B indicate that employment impacts under split deployment would be significantly lower, though impacts on county economies would still be severe. Peak employment would reach 1,800 jobs in each of Dallam and Hartley counties in 1989 and 1987, from construction of DDA facilities. This represents 70 percent of baseline employment in Dallam County in 1989 and 140 percent of Hartley County's 1987 baseline. In both counties, M-X-related employment would fall off to zero by 1990. Compared to full basing, split deployment would exacerbate the boom-bust problem, since labor requirements would rise and decline more rapidly.

Table 3.1.3.7-1 indicates that under full basing, operations would begin in 1985 in Hartley County, with an initial staff of less than 50 persons. The full staff of 5,600 persons would be present by 1989 and would remain for the life of M-X deployment. Of these, 82 percent would be military personnel. No long run direct employment by place-of-work is projected in Dallam County.

Indirect employment would begin in 1983 in both counties under full basing. It would peak at 2,900 jobs in Hartley County and at 2,800 jobs in Dallam County in 1987. Indirect employment would decline thereafter, reaching a long-term level of approximately 900 jobs in Hartley County and approximately 500 jobs in Dallam County. In both counties, the principal source of indirect employment is the spending of earnings earned by direct employees. There would also be local procurement of goods and services from area suppliers who would tend to expand their employment levels to meet the increased demand. Some project-related investments by local, state, and federal governments and private business would also create additional short-term indirect employment. Indirect employment in Moore County would peak at 500 jobs in 1987, roughly 7 percent of the county's total baseline employment in that year. Under split deployment, very little indirect employment would be generated in any of the three counties (see ETR-3B).

Table 3.1.3.7-1.

## M-X RELATED SYSTEM EMPLOYMENT BY PLACE OF EMPLOYMENT, IN HARTLEY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
 BASE I AT CLOVIS, NM (CURRY CO.)  
 BASE II AT DALHART, TX (HARTLEY CO.)

TYPE OF EMPLOYMENT	NUMBER OF JOBS												
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
TECHNICAL FACILITIES													
CONSTRUCTION	0	471	1018	1662	1748	471	0	0	0	0	0	0	0
ASSEMBLY + CHECKOUT	0	0	25	48	41	1273	0	0	0	0	0	0	0
BASE													
CONSTRUCTION	0	0	179	1877	2156	1899	718	0	0	0	0	0	0
ASSEMBLY AND CHECKOUT	0	0	0	0	0	50	0	0	0	0	0	0	0
OPERATIONS													
OFFICERS	0	0	0	5	12	166	262	290	290	290	290	290	290
ENLISTED PERSONNEL	0	0	0	24	170	1513	3416	4275	4275	4275	4275	4275	4275
CIVILIANS	0	0	0	2	64	267	819	1035	1035	1035	1035	1035	1035
TOTAL DIRECT	0	471	1222	3618	4191	5639	5215	5600	5600	5600	5600	5600	5600
INDIRECT	0	81	491	1656	2257	2934	2655	1927	1474	1004	889	881	881
TOTAL	0	552	1713	5274	6448	8573	7870	7527	7074	6604	6489	6481	6481

SOURCE: HDR SCIENCES, 16-SEP-81

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With Alternative 7, peak total employment (direct plus indirect) by place-of-work would reach 8,000 jobs in Dallam County and 8,600 jobs in Hartley County in 1987. These peak figures are almost 300 percent of projected total employment of about 2,500 in Dallam County in 1987. They are 580 percent of the projected employment in Hartley County in 1987. Tables 3.1.3.7-2, 3.1.3.7-3, and 3.1.3.7-4 present estimates of employment impacts by place-of-residence--the number of persons holding jobs in Hartley, Dallam, and Moore counties. The peak number of persons employed directly or indirectly by M-X in Hartley County would equal 7,500 in 1987 (Table 3.1.3.7-2), about 1,000 less than the peak number of jobs by place-of-work (see Table 3.1.3.7-1). In Dallam County, the peak figure of 8,000 jobs by place-of-work adjusts downward to 7,300 jobs. Table 3.1.3.7-3 indicates that although many construction workers would in-migrate many would work in Dallam County, but live outside it. In Moore County, on the other hand, employment by place-of-residence peaks at 1,300 persons in 1987, 800 more than peak jobs in that year. Table 3.1.3.7-4 indicates substantial in-migration of direct project workers who would have jobs in Hartley County, but live in Moore County.

Total employment by place of residence stabilizes by 1992 at 1,400 in Dallam County and at 5,200 persons in Hartley County, about 50 percent and 350 percent of baseline employment, respectively. Total employment by place-of-residence in Moore County stabilizes at almost 700 jobs, mostly composed of base employees living in the county. There is no long run employment in any of the counties under split basing.

Under full basing, boom-growth conditions would result in both Dallam and Hartley counties from M-X deployment. These conditions would be more severe in Hartley County than in Dallam County. Labor shortages, wage-price inflation, and a very large in-migration of workers into the counties are expected. Rapid expansion of the service and trade sectors in Hartley County, currently an agriculturally-based economy, would also result.

#### Labor Force Effects (3.1.3.7.2)

Labor markets would become very tight, particularly during the buildup phases in Dallam and Hartley counties, under both full and split deployment. This would be especially acute for the construction trades. Tables 3.1.3.7-2 through 3.1.3.7-4 present baseline projections of employment, the local labor force available for construction and operations, and indirect employment. These labor force estimates are derived from the projected unemployed labor force less an estimate of the number of persons who would probably remain unemployed even in extremely tight labor markets. The tables also present M-X-related employment by place-of-residence, as noted above, and they estimate civilian labor force in-migration. Labor force impacts are very important since they indicate probable civilian population growth, which impacts local infrastructure and public finance.

Table 3.1.3.7-3 indicates in Dallam County that total employment by place of residence peaks at 7,300 persons in 1987. In the same year, Dallam County is forecast to have almost 100 unemployed residents, but the unemployment rate is so low that its available labor force is projected to be zero. Net civilian labor force in-migration is calculated by comparing the expected available labor pool in Dallam County with M-X demand for civilian labor. It represents cumulative civilian labor in-migration into the county, which in 1987 would equal almost 7,600 workers. That

Table 3.1.3.7-2.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN HARTLEY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
BASE I AT CLOVIS, NM (CURRY CO.)  
BASE II AT DALHART, TX (HARTLEY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	3650	3730	3810	3890	3970	4050	4130	4210	4290	4370	4450	4530	4610
LF PARTICIPATION RATE	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60
LABOR FORCE	1190	1216	1242	1268	1294	1320	1346	1372	1399	1425	1451	1477	1503
EMPLOYMENT: LF CONCEPT	1159	1184	1210	1235	1261	1286	1311	1337	1362	1388	1413	1438	1464
UNEMPLOYMENT	31	32	32	33	33	34	35	35	37	37	38	39	39
UNEMPLOYMENT RATE	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
RESIDENTIAL LF	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR OPERATIONS	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR IND EMPLOYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	0	331	766	1435	1489	771	291	44	0	0	0	0	0
SHELTER ASS & CKOUT	0	0	16	32	35	967	191	29	0	0	0	0	0
BASE CONSTRUCTION	0	0	116	1220	1401	1234	467	0	0	0	0	0	0
BASE ASS & CKOUT	0	0	0	0	0	33	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	25	155	1427	3126	3880	3880	3880	3880	3880	3880
OPERATIONS, CIVILIAN	0	0	0	1	26	107	328	414	414	414	414	414	414
INDIRECT EMPLOYMENT	0	81	491	1656	2257	2934	2655	1927	1474	1004	889	881	881
TOTAL	0	413	1389	4369	5363	7472	7058	6294	5768	5298	5183	5175	5175
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	360	959	2886	3142	2179	823	48	0	0	0	0	0
ASS AND CKOUT LF	0	0	16	32	35	999	191	29	0	0	0	0	0
CIVILIAN OPS	0	0	0	1	26	107	328	414	414	414	414	414	414
SECONDARY	0	112	304	922	1075	1693	1902	1995	1972	1972	1972	1972	1972
ADDITIONAL INDIRECT	0	0	214	817	1282	1419	981	181	0	0	0	0	0
TOTAL LF	0	473	1494	4659	5559	6398	4225	2668	2386	2386	2386	2386	2386
<b>PROJECTIONS WITH M-X</b>													
POPULATION	3651	4614	6888	13723	16399	20296	18503	16045	15383	15463	15543	15623	15703
CIV LABOR FORCE	1190	1689	2736	5927	6854	7718	5571	4040	3784	3810	3836	3862	3888
EMPLOYMENT: LF CONCEPT	1159	1597	2599	5579	6469	7331	5243	3751	3250	2806	2716	2733	2759
UNEMPLOYMENT	31	92	137	348	385	387	328	289	534	1004	1120	1129	1129
UNEMPLOYMENT RATE	2.60	5.40	5.00	5.90	5.60	5.00	5.90	7.20	14.10	26.40	29.20	29.20	29.10

SOURCE: HDR SCIENCES, 16-SEP-81

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Table 3.1.3.7-3.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN DALLAM

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
BASE I AT CLOVIS, NM (CURRY CO.)  
BASE II AT DALLAM, TX (HARTLEY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	6850	6930	7010	7100	7170	7250	7330	7410	7500	7610	7730	7850	7970
LF PARTICIPATION RATE	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50
LABOR FORCE	2432	2460	2489	2521	2545	2574	2602	2631	2663	2702	2744	2787	2829
EMPLOYMENT: LF CONCEPT	2347	2374	2401	2432	2456	2484	2511	2538	2569	2607	2648	2689	2730
UNEMPLOYMENT	85	86	88	89	89	90	91	93	94	95	96	98	99
UNEMPLOYMENT RATE	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
RESIDENTIAL LF	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR OPERATIONS	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR IND. EMPLOYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	0	248	885	2584	2413	2821	1531	139	0	0	0	0	0
SHELTER ASS. & CKOUT	0	0	4	16	63	1151	1160	29	0	0	0	0	0
BASE CONSTRUCTION	0	0	27	282	323	285	108	0	0	0	0	0	0
BASE ASS. & CKOUT	0	0	0	0	0	8	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	3	18	168	368	457	457	457	457	457	457
OPERATIONS, CIVILIAN	0	0	0	1	26	107	328	414	414	414	414	414	414
INDIRECT EMPLOYMENT	0	93	531	1567	2112	2786	2485	1703	1202	667	538	533	533
TOTAL	0	341	1446	4452	4955	7325	5979	2741	2072	1538	1408	1404	1404
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	269	991	3114	2974	3375	1781	151	0	0	0	0	0
ASS. AND CKOUT LF	0	0	4	16	63	1159	1160	29	0	0	0	0	0
CIVILIAN OPS	0	0	0	1	26	107	328	414	414	414	414	414	414
SECONDARY	0	84	310	978	969	1546	1255	479	423	423	423	423	423
ADDITIONAL INDIRECT	0	17	248	677	1231	1382	1350	1275	826	291	161	157	157
TOTAL LF	0	370	1553	4786	5262	7569	5874	2348	1662	1128	998	994	994
<b>PROJECTIONS WITH M-X</b>													
POPULATION	6851	7596	10150	16654	18391	23330	20819	14388	12577	10907	10596	10700	10820
CIV LABOR FORCE	2432	2830	4742	7307	7807	10143	8476	4979	4325	3829	3742	3780	3823
EMPLOYMENT: LF CONCEPT	2347	2715	3848	6881	7393	9640	8123	4823	4185	3688	3600	3636	3678
UNEMPLOYMENT	85	115	194	426	414	503	353	156	140	141	142	144	145
UNEMPLOYMENT RATE	3.50	4.10	4.80	5.80	5.30	5.00	4.20	3.10	3.20	3.70	3.80	3.80	3.80

SOURCE: MOR SCIENCES, 16-SEP-81

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Table 3.1.3.7-4.

EMPLOYMENT, POPULATION, AND LABOR FORCE PROJECTIONS,  
WITH AND WITHOUT M-X, IN MOORE

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
BASE I AT CLOVIS, NM (CURRY CO.)  
BASE II AT DALHART, TX (HARTLEY CO.)

VARIABLE	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>BASELINE</b>													
POPULATION	14610	14670	14730	14800	14870	14950	15030	15110	15190	15290	15390	15490	15590
LF PARTICIPATION RATE	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80
LABOR FORCE	6837	6866	6894	6926	6959	6997	7034	7071	7109	7156	7203	7249	7296
EMPLOYMENT-LF CONCEP	6564	6591	6618	6649	6681	6717	6753	6789	6825	6869	6914	6959	7004
UNEMPLOYMENT	273	275	276	277	278	280	281	282	284	287	289	290	292
UNEMPLOYMENT RATE	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
RESIDENTIAL LF	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR CONSTRUCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR OPERATIONS	0	0	0	0	0	0	0	0	0	0	0	0	0
--FOR IND. EMPLOYMEN	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>M-X RELATED EMPLOYMENT</b>													
SHELTER CONSTRUCTION	0	60	154	331	325	238	103	8	0	0	0	0	0
SHLTER ASS & CKOUT	0	0	3	5	8	196	81	0	0	0	0	0	0
BASE CONSTRUCTION	0	0	18	188	216	190	72	0	0	0	0	0	0
BASE ASS & CKOUT	0	0	0	0	0	5	0	0	0	0	0	0	0
OPERATIONS, MILITARY	0	0	0	1	9	84	184	228	228	228	228	228	228
OPERATIONS, CIVILIAN	0	0	0	0	13	53	164	207	207	207	207	207	207
INDIRECT EMPLOYMENT	1	32	106	340	433	539	459	291	224	215	214	214	214
TOTAL	1	92	280	866	1003	1304	1063	734	659	650	650	650	650
<b>M-X LF IMMIGRATION</b>													
CONSTRUCTION LF	0	65	187	564	587	465	190	9	0	0	0	0	0
ASS AND CKOUT LF	0	0	3	5	8	201	81	0	0	0	0	0	0
CIVILIAN OPS	0	0	0	0	13	53	164	207	207	207	207	207	207
SECONDARY	0	20	59	179	197	273	253	214	211	211	211	211	211
ADDITIONAL INDIRECT	1	13	52	178	254	292	232	100	36	27	26	26	26
TOTAL LF	1	99	301	926	1059	1284	920	530	454	445	445	445	445
<b>PROJECTIONS WITH M-X</b>													
POPULATION	14614	14831	15244	16422	16848	17483	17221	16623	16472	16542	16641	16741	16841
CIV. LABOR FORCE	6839	6964	7134	7853	8018	8280	7955	7601	7563	7601	7647	7694	7741
EMPLOYMENT-LF CONCEP	6565	6682	6898	7514	7675	7937	7632	7294	7255	7291	7336	7381	7426
UNEMPLOYMENT	274	282	296	339	343	343	323	307	308	310	311	313	315
UNEMPLOYMENT RATE	4.00	4.00	4.10	4.30	4.30	4.10	4.10	4.00	4.10	4.10	4.10	4.10	4.10

SOURCE: HDR SCIENCES, 16-SEP-81

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is, up to and including 1987, a total of 7,600 civilian workers would become new residents in the county. This includes persons actually employed, their dependents who would become members of the labor force, and those persons attracted to the area by job prospects. Table 3.1.3.7-2 indicates cumulative civilian in-migration would peak at 6,400 persons in Hartley County. A peak of 1,300 is projected for Moore County (Table 3.1.3.7-3). Data in ETR-3B indicate significantly less civilian labor in-migration under split deployment.

Rapid out-migration also is projected in Dallam, Hartley, and Moore counties as construction-related job opportunities decline. Of the three, Hartley County has greatest long run civilian in-migration, a figure which stabilizes at 2,400 persons by 1990. This is the estimated long run civilian worker in-migration into the county under Alternative 7. The comparable figure for Dallam County is about 1,000 persons and for Moore County, 400 persons. Following peak in-migration, labor markets would become more slack, and the rapid induced growth in construction trades wage levels would begin to decline. Particularly in Hartley County, occupational transition would begin in short run, boom-growth industries and expand into services and trade industries during long run base-associated economic expansion.

#### **WESTERN STATES REGION (3.1.4)**

The size of the M-X missile project would have effects distributed across many states and metropolitan areas. Impacts would result from direct labor requirements, growth of construction resource requirements, and the induced growth resulting from industries in communities adjacent to shelter and base construction and operations, as well as in nearby metropolitan areas. This western regional study makes use of Chase Econometrics system of state models, which Chase has built to produce forecasts of state activity. Chase Econometrics was supplied project expenditure and employment data in the summer of 1980 and, subsequently, ran an aggregated regional model that fall. However, ongoing studies by the Air Force and Corps of Engineers have necessitated revision of many project input data. Most importantly, project labor requirements were revised. Reanalysis of western regional impacts utilizing these revised data is in process, but owing to complicated model changes, it is not available at this time. Later reports will incorporate revised impact estimates. It is the purpose of this study to compare employment impacts to the baseline environment across the 12-state region as the project is varied in magnitude and location. On this basis, Chase's study of Fall 1980 is still relevant; it indicates the magnitude of relative impact across the 12 western states and allows comparison to their baseline environment.

For comparative purposes, the following discussion highlights changes in direct employment data from those utilized in the Chase Econometrics study. Table 3.1.4-1 presents direct employment requirements for full basing in Nevada/Utah utilized by Chase Econometrics. FEIS direct employment figures, particularly in the short run, are substantially higher. Table 3.1.4-1 indicates peak employment of 29,450 jobs, a figure which is about 93 percent of revised direct employment projected to occur in that year. Most of this change is attributable to an increased construction workforce in Utah, and increases in the operations personnel, particularly enlisted persons, in Nevada. Conversely, in 1986, operations staffing levels in Utah are substantially less in the FEIS study. In this study peak direct employment would occur in 1987, at 33,548 jobs, a figure which is about 15 percent

Table 3.1.4-1. Direct employment by state by type, full basing, Nevada/Utah.

State and Employment Type	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Nevada</b>										
Construction	--	100	1,400	5,500	11,100	10,800	9,600	3,750	--	--
Assembly and										
Checkout	--	50	70	1,070	2,120	2,060	2,170	2,300	50	--
Operations										
Officers	--	--	--	--	100	200	350	450	450	450
Enlisted	--	--	--	--	1,100	2,200	3,250	4,400	4,400	4,400
Civilians	--	--	--	--	200	400	650	850	850	850
<b>Utah</b>										
Construction	1,150	1,900	3,050	5,300	5,950	4,650	3,450	1,050	--	--
Assembly and										
Checkout	--	350	930	2,480	3,880	3,940	3,730	3,450	50	--
Operations										
Officers	--	--	100	200	300	400	500	600	600	600
Enlisted	--	--	950	1,925	2,900	3,850	4,800	5,750	5,750	5,750
Civilians	--	--	200	375	550	750	950	1,150	1,150	1,150
Bistate Total	1,150	2,400	6,700	16,850	28,200	29,250	29,450	23,750	13,300	13,200

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Note: Employment continues at 1991 levels throughout the operating life of the system.

Source: HDR Sciences, 11 July 1980, based on information provided by U.S. Air Force, Ballistic Missile Office.

above the figures used by Chase Econometrics in that year. Long run employment is roughly the same; in the FEIS it equals 13,330 jobs while it equalled 13,200 jobs at the time Chase Econometrics ran their models. Thus, the work performed by Chase Econometrics would still remain relatively unchanged in the long run. In the short run, however, their results would understate employment impacts.

Tables 3.1.4-2 and 3.1.4-3 present direct employment figures used by Chase Econometrics for full basing in Texas/New Mexico (Alternative 7) and for split basing in Nevada/Utah and Texas/New Mexico (Alternative 8), respectively. In general, their direct employment figures underestimate revised direct employment in the short run, but are equivalent once project operations stabilize, about 1991. Peak direct employment in Table 3.1.4-2, would be compared to Table 4.3.3.1-16 in the FEIS for full basing in Texas/New Mexico, while Table 3.1.4-3 would compare to FEIS direct employment figures for split basing given in Tables 4.3.3.1-22 and 4.3.3.1-29.

Other changes undertaken in the project description which would make the Chase study an underestimate of employment impacts include revision and expansion of the construction resource requirements utilized in their study. Whereas the original Chase study, reported here, incorporated project demand for cement, steel, and fuel, their revised study includes analysis of demand growth for water, steel, concrete, asphalt, aggregate, prime coat, fencing, energy, petroleum, oil, and lubricants. The revised model also incorporates explicit recognition of overhead costs, a necessary business expense of any project contractor. Other revisions to wage-rate assumptions and tax, savings, and income transfer assumptions have also been undertaken.

All revisions undertaken by Chase Econometrics will serve to increase employment impacts resulting from M-X. Revisions to the economic model, most notably the incorporation of higher direct employment figures, have increased peak employment impacts by about 3,800 persons, from a peak employment figure of 59,900 for full basing in Nevada/Utah presented in the DEIS, to a figure of 63,700 in the FEIS. This represents an upward revision of about 6 percent. The long run difference in employment between DEIS and FEIS figures is less, about 1,900 persons, but it is an upward revision of about 10 percent in the FEIS. Comparable differences are evident between full basing Texas/New Mexico DEIS and FEIS employment impacts and split basing, DEIS and FEIS figures. In all cases, change in employment was not large between the DEIS and FEIS. Revisions to the Chase Econometrics study should not produce dramatic differences from those presented here.

#### **Western Regional Effects (3.1.4.1)**

Table 3.1.4.1-1 presents M-X employment impacts for the 12-state region for each of the three project configurations. All three scenarios indicate a very rapid buildup, with peak employment in 1986-1987 ranging from a low of 66.4 thousand jobs under full-basing in Texas/New Mexico to 77.3 thousand under split basing. Long run employment, beginning roughly by 1991 would be about 23,000 jobs under each of the three alternatives. Under all options, the western states region would likely be sufficiently large to absorb growth; peak M-X-related employment would be only 0.3 percent of the region's 1987 baseline nonagricultural employment level of 27,651,700 jobs (Table 3.1.4.1-1). These baseline projections are output from

Table 3.1.4-2 Direct employment by state by type, full basing, Texas/New Mexico.

State and Employment Type	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Texas</b>										
Construction	--	--	150	3,400	8,350	11,600	10,400	3,950	--	--
Assembly and										
Checkout	--	--	--	350	1,350	2,150	2,350	2,400	50	--
Operations										
Officers	--	--	--	--	100	200	350	450	450	450
Enlisted	--	--	--	--	1,100	2,200	3,250	4,400	4,400	4,400
Civilians	--	--	--	--	200	400	650	850	850	850
<b>New Mexico</b>										
Construction	1,150	2,850	4,850	6,900	6,250	4,350	2,800	400	--	--
Assembly and										
Checkout	--	400	1,000	3,200	4,650	3,850	3,550	3,550	50	--
Operations										
Officers	--	--	100	200	300	400	500	600	600	600
Enlisted	--	--	950	1,925	2,900	3,850	4,800	5,750	5,750	5,750
Civilians	--	--	200	375	550	750	950	1,150	1,150	1,150
Bistate Total	1,150	3,250	7,250	16,350	25,750	29,750	29,600	23,300	13,300	13,200

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Note: Employment continues at 1991 levels throughout the operating life of the system.

Source: HDR Sciences, 11 July 1980, based on information provided by U.S. Air Force, Ballistic Missile Office.

Table 3.1.4-3. Direct employment by state by type, split basing, Nevada/Utah and Texas/New Mexico.

State and Employment Type	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Texas</b>										
Construction	--	--	--	900	2,350	4,250	5,400	1,850	--	--
Assembly and Checkout	--	--	--	150	450	600	1,250	1,450	50	--
Operations	--	--	--	--	--	--	--	--	--	--
Officers	--	--	--	--	--	--	--	--	--	--
Enlisted	--	--	--	--	--	--	--	--	--	--
Civilians	--	--	--	--	--	--	--	--	--	--
<b>Nevada</b>										
Construction	1,100	2,000	4,450	6,100	5,800	850	--	--	--	--
Assembly and Checkout	--	300	790	2,170	3,140	2,370	2,100	2,000	50	--
Operations	--	--	100	200	300	400	500	600	600	600
Officers	--	--	950	1,900	2,850	3,800	4,800	5,700	5,700	5,700
Enlisted	--	--	200	375	550	750	950	1,100	1,100	1,100
Civilians	--	--	--	--	--	--	--	--	--	--
<b>Utah</b>										
Construction	--	--	50	2,600	6,050	5,700	1,100	--	--	--
Assembly and Checkout	--	--	10	530	1,310	1,430	900	950	--	--
Operations	--	--	--	--	--	--	--	--	--	--
Officers	--	--	--	--	--	--	--	--	--	--
Enlisted	--	--	--	--	--	--	--	--	--	--
Civilians	--	--	--	--	--	--	--	--	--	--
<b>New Mexico</b>										
Construction	--	300	2,150	4,150	5,250	5,850	1,850	--	--	--
Assembly and Checkout	6	250	700	1,600	2,600	3,050	3,050	2,700	50	--
Operations	--	--	--	100	200	300	400	500	500	500
Officers	--	--	--	950	1,850	2,850	3,700	4,650	4,650	4,650
Enlisted	--	--	--	200	350	550	750	900	900	900
Civilians	--	--	--	--	--	--	--	--	--	--
<b>Four-state Total</b>	<b>1,106</b>	<b>2,850</b>	<b>9,400</b>	<b>21,900</b>	<b>28,750</b>	<b>32,750</b>	<b>26,750</b>	<b>22,400</b>	<b>13,060</b>	<b>12,850</b>

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Note: Employment continues at 1991 levels throughout the operating life of the system.

Source: HDR Sciences, 11 July 1980, based on information provided by U.S. Air Force, Ballistic Missile Office.

Table 3.1.4.1-1. M-X related change in total non-agricultural employment (Page 1 of 2).

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<b>ARIZONA</b>											
Baseline	1,109.3	1,155.0	1,198.9	1,246.5	1,294.2	1,341.4	1,387.6	1,435.0	1,486.7	1,549.7	1,603.0
MX1	0.11	0.07	0.09	0.18	0.34	0.43	0.40	0.28	0.11	0.03	0.01
MX2	0.12	0.14	0.23	0.40	0.60	0.68	0.70	0.44	0.21	0.10	0.07
MX3	0.11	0.07	0.15	0.34	0.57	0.70	0.58	0.32	0.13	0.06	0.05
<b>CALIFORNIA</b>											
Baseline	9,927.6	10,193.8	10,518.3	10,916.3	11,289.8	11,633.5	11,984.7	12,327.3	12,688.6	13,127.1	13,521.1
Diff (MX1)	0.19	0.43	0.89	2.11	4.16	5.10	4.80	3.38	1.53	0.71	0.61
Diff (MX2)	0.10	0.19	0.38	0.71	1.07	1.24	1.17	0.82	0.38	0.20	0.18
Diff (MX3)	0.25	0.54	1.27	2.46	3.70	3.61	2.49	1.51	0.88	0.61	0.57
<b>COLORADO</b>											
Baseline	1,267.7	1,300.4	1,346.4	1,394.4	1,440.1	1,487.2	1,532.9	1,580.2	1,629.2	1,692.0	1,741.4
MX1	0.02	0.50	0.09	0.18	0.31	0.37	0.34	0.24	0.09	0.03	0.02
MX2	0.04	0.12	0.23	0.41	0.59	0.65	0.59	0.41	0.20	0.11	0.10
MX3	0.02	0.04	0.13	0.31	0.55	0.70	0.51	0.33	0.15	0.09	0.09
<b>IDAHO</b>											
Baseline	366.4	480.4	394.9	410.3	425.2	439.9	454.2	468.8	483.1	501.5	517.0
MX1	0.03	0.02	0.03	0.07	0.13	0.15	0.13	0.08	0.03	0.01	0.01
MX2	0.02	0.01	0.02	0.03	0.05	0.05	0.05	0.03	0.01	0.00	0.00
MX3	0.03	0.02	0.03	0.07	0.11	0.11	0.07	0.03	0.01	0.01	0.01
<b>MONTANA</b>											
Baseline	322.6	338.4	352.1	366.7	381.0	395.7	410.1	425.1	440.4	460.2	476.3
MX1	0.03	0.01	-0.02	0.02	0.05	0.06	0.06	0.04	0.01	0.00	0.00
MX2	0.03	0.01	-0.02	0.01	0.03	0.04	0.04	0.02	0.01	0.00	0.00
MX3	0.03	0.01	0.01	0.03	0.06	0.06	0.06	0.04	0.02	0.00	0.00
<b>NEVADA</b>											
Baseline	367.6	381.5	401.8	426.5	452.0	477.5	503.4	530.6	559.1	591.2	622.6
MX1	0.05	0.18	2.17	10.28	24.64	29.21	29.67	22.62	11.07	8.41	8.42
MX2	0.00	0.02	0.03	0.05	0.07	0.07	0.06	0.03	0.01	0.00	0.00
MX3	1.69	3.78	10.32	17.94	22.29	15.58	13.02	14.16	11.59	10.85	10.86
<b>NEW MEXICO</b>											
Baseline	494.1	509.8	525.0	542.0	559.2	576.2	592.3	606.3	619.0	637.0	653.7
MX1	0.02	0.02	0.03	0.06	0.12	0.14	0.13	0.09	0.03	0.00	0.00
MX2	1.72	5.65	12.47	22.62	28.28	26.52	24.15	20.94	14.07	12.16	12.13
MX3	0.08	0.70	4.56	12.09	18.89	24.14	20.20	16.13	11.13	9.79	9.76
<b>OREGON</b>											
Baseline	1,083.6	1,118.2	1,160.2	1,204.5	1,246.4	1,287.8	1,327.4	1,367.8	1,408.0	1,455.9	1,502.1
MX1	0.04	0.04	0.07	0.16	0.28	0.33	0.31	0.22	0.11	0.06	0.05
MX2	0.04	0.02	0.04	0.07	0.11	0.13	0.12	0.08	0.04	0.02	0.02
MX3	0.04	0.02	0.06	0.13	0.24	0.27	0.19	0.09	0.04	0.03	0.02
<b>TEXAS</b>											
Baseline	6,904.6	6,282.6	6,497.4	6,727.7	6,946.7	7,169.2	7,380.6	7,597.8	7,827.9	8,110.1	8,353.0
MX1	1.93	4.44	9.71	19.45	28.04	29.87	29.04	25.77	16.73	13.65	13.53
MX2	0.02	0.03	0.05	0.09	0.13	0.15	0.14	0.09	0.03	0.01	0.01
MX3	0.03	0.04	5.12	14.92	18.48	9.54	3.54	0.85	0.12	0.06	0.05

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Table 3.1.4.1-1. M-X related change in total non-agricultural employment (Page 2 of 2).

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<b>UTAH</b>											
Baseline	607.8	624.0	643.6	666.0	688.2	710.9	732.0	752.7	773.4	799.9	822.3
MX1	1.93	4.44	9.71	19.45	28.04	29.8	29.04	25.77	16.73	13.65	13.53
MX2	0.02	0.03	0.05	0.09	0.13	0.15	0.14	0.09	0.03	0.01	0.01
MX3	0.03	0.04	5.12	14.92	18.48	9.54	3.54	0.85	0.12	0.06	0.05
<b>WASHINGTON</b>											
Baseline	1,109.8	1,155.0	1,198.9	1,246.5	1,294.2	1,341.4	1,387.6	1,435.0	1,486.7	1,549.7	1,603.0
MX1	0.11	0.07	0.09	0.18	0.34	0.43	0.40	0.28	0.11	0.03	0.01
MX2	0.12	0.14	0.23	0.40	0.60	0.68	0.64	0.44	0.21	0.10	0.07
MX3	0.11	0.07	0.15	0.34	0.57	0.70	0.58	0.32	0.13	0.06	0.05
<b>WYOMING</b>											
Baseline	227.9	234.8	242.3	250.7	258.5	265.9	272.9	279.9	286.6	298.1	301.9
MX1	0.01	0.01	0.02	0.04	0.08	0.09	0.08	0.06	0.02	0.00	0.00
MX2	0.01	0.01	0.01	0.03	0.04	0.05	0.05	0.03	0.01	0.00	0.00
MX3	0.01	0.01	0.02	0.05	0.08	0.09	0.06	0.02	0.01	0.00	0.00
<b>REGIONAL TOTAL</b>											
Baseline	23,499.3	24,186.8	24,992.3	25,918.5	26,797.9	27,651.7	28,491.3	29,333.1	30,215.7	31,294.2	32,241.5
MX1	2.89	5.54	13.51	33.44	59.75	67.75	66.89	54.24	30.45	23.22	22.93
MX2	2.67	7.00	15.12	32.86	54.34	66.49	67.55	53.84	30.16	22.86	22.43
MX3	2.77	5.64	17.49	42.16	69.69	77.33	64.47	48.35	28.34	22.38	22.04

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1 "MX1" presents change in employment resulting from full deployment in Nevada/Utah.

2 "MX2" presents change in employment resulting from full deployment in Texas/New Mexico.

3 "MX3" presents change in employment resulting from split deployment in Nevada/Utah and Texas/New Mexico.

Source: Chase Econometrics, "Macroeconomic Impact Study of Deployment of the M-X System on Western States and Metropolitan Areas," May 1981.



Chase Econometrics state econometric models, and will differ from those presented in the baseline analysis of the western states region (Section 2.1.4 of this ETR).

The net long run impact of M-X on employment in the region as a whole would be even less noticeable. However, effects are not evenly distributed across the region, nor is baseline growth, as Table 3.1.4-3 indicated. Depending upon the deployment options, impacts would be concentrated in Nevada/Utah and/or Texas/New Mexico. Baseline growth of energy production in the Intermountain West could be equally dramatic for Utah and New Mexico, particularly as indicated in the WESTPO and OFEA studies (Abt/West 1981; Mountain West Research 1981). The WESTPO report states that "...energy activities alone, without considering mineral development, could bring the region a 140 percent increase in direct employment by 1990...an increase of about 205,000 direct, on-site jobs in oil, gas, uranium, coal and synfuels in the next decade." (The Salt Lake Tribune, July 9, 1981). Competition for workers with professional, technical, managerial and craft skills could occur, and if so would likely require labor in-migration. This, in turn would lead to labor and other resource price increases over the short run in the most heavily impacted states.

#### Full Deployment--Nevada/Utah (3.1.4.1.1)

Full deployment of the M-X missile system in Nevada/Utah would provide direct employment of over 29,200 jobs at the peak of project activities. It would also induce demand growth for construction materials, e.g., cement, aggregate, sand and gravel, water, energy, and petroleum, oil, and lubricants. Demand would also increase for support goods and services, and would be observed through local and regional growth of supplier industries. Most economic growth would be concentrated in the bi-state area of Nevada/Utah. However, demand for labor and other construction and operations resources as well as ancillary growth in support industries would impact a region larger than the two states, but would be likely to occur in this study's 12 western states region.

#### Direct Employment (3.1.4.1.1.1)

Construction would begin in 1982, and would be comprised of about 1,100 construction workers in Utah (Table 3.1.4-1). Construction employment is projected to peak at more than 17,000 workers in 1986, while peak direct employment in all categories (construction, assembly and checkout, and base operations personnel) is projected to be as high as 29,200 workers in 1987. Direct employment would decline in subsequent years as construction activities would be completed. Over the long run, direct employment would equal 13,200 workers, a figure reached by 1990. Under this full deployment scenario, relatively more of the direct employment would be concentrated in areas proximal to the first operating base, assumed located in Utah. Operations would begin at this site with 1,200 persons in 1984, then gradually build to a full staffing level of 7,500 workers by 1989. The second operating base in Nevada would begin operations in 1986 with 1,400 employees, and reach its full complement by 1989.

#### Total M-X-Related Employment (3.1.4.1.1.2)

Direct project workers spending their incomes primarily in the two states, but in other areas of the region as well, and base procurement from area supply

industries would increase employment throughout the region; however it would be principally concentrated in metropolitan areas. Most employment impacts would be felt in Nevada and Utah, but state-level impacts would also be experienced in California, and to a much lesser extent in the remaining nine western states (Table 3.1.4.1-1). The states of Colorado, Idaho, Montana, New Mexico, Oregon, Washington, and Wyoming would experience negligible impacts throughout the life of the system. This results from their relatively large distance from the project site and from these states' metropolitan centers not being large enough and well enough developed to supply labor and other construction resources on a competitive level with metropolitan economies in California, Nevada, and Utah.

In Nevada, total employment related to the project would peak at almost 30,000 persons in 1988. This figure is almost six percent of the state's baseline non-agricultural employment in that year and five percent of total employment projected for 1985, given in Table 2.1.4.4-1. Peak employment in Utah would reach about the same level, 30,000 persons, in 1987. This figure would represent about four percent of both Utah's baseline nonagricultural employment of 711,000 persons in 1987 and its total employment projected at 750,361 persons in 1985. In California, peak total employment would be slightly above 5,000 persons in 1987, less than 1 percent of the state's baseline employment of 11.7 million persons in that year. Other peak state-level impacts would range from a high of 1,400 persons in Texas to a low of 600 persons in Montana. In virtually all states except Nevada/Utah, full deployment under this scenario would be expected to have very modest economic impacts. Peak employment in these states would never range above 1 percent of their baseline nonagricultural employment figures.

The Chase results indicate relatively modest employment impacts in the aggregate. This is especially evident when direct and indirect employment estimates are compared to the region's employment and labor force baseline, presented earlier in Tables 2.1.4.3-1, 2.1.4.4-1, and 2.1.4.4-2. However, significant dislocation in key industries and occupations could result when cumulative impacts of M-X and future energy projects are assessed.

The WESTPO study estimates a projected peak direct employment figure of 279,780 jobs in 1986 in their study region; M-X would account for only ten percent of this total (Abt/West, 1981). The study has identified possible large increases in future employment in synfuels, non-energy minerals, coal, oil and natural gas, and uranium.

Cumulative impacts could generate large demand growth for professional, technical, and managerial personnel. The WESTPO study projects dislocation in skilled industries as well, including pipefitters/welders, electricians, operating engineers, carpenters, and ironworkers. In all of these craft trades, the share of M-X demand would be a very small percent of total regional requirements (Abt/West, 1981). The single exception occurs with ironworkers, where over the 1985-1987 period, M-X demand of about 1,500 ironworkers would be at least as great as energy-related demands. Largest demand, however, for both energy-related and the M-X projects would be for operating engineers (those who operate earthmoving and other heavy equipment) at roughly 20,000 workers in 1989. Peak M-X demand in 1986-1987 would be roughly 6,000 operating engineers, about 30 percent of the total in that two-year period according to the WESTPO study.

A study by Mountain West Research, Inc. (1981) for the OEA reaches similar conclusions on demand growth for skilled crafts. In addition, it points to the fact that indirect-induced employment could stress operating engineers and carpenters in particular, given the need for industrial and residential construction. Table 2.1.4.4-4 presents national level growth rates for selected craft trades. Employment of operating engineers is forecast to grow at an average annual rate of 2.9 percent between 1979-1986, while employment of carpenters would grow at only 0.9 percent annually over the same period. Other crafts identified in the WESTPO and OEA studies are projected to grow at rates in between those two extremes. Table 2.1.4.4-5 presents baseline forecasts of these same crafts for Nevada, Utah, Colorado, and California. The WESTPO figure of 20,000 operating engineers, the peak demand for M-X plus energy-related projects in 1989, is about five times the combined Nevada/Utah total of 4,380 persons for this craft in 1986. This peak figure is about 64 percent of the baseline supply forecast of operating engineers presented in Table 2.1.4.4-5 for 1986. However, it is only three percent of the U.S. baseline figure of 731,000 persons in 1986. Other crafts would be less stressed.

Demand for particular occupational skills could require labor in-migration into Nevada and Utah. Labor supply augmentation would also be likely through industry training programs, union apprenticeship training programs, and institutional programs through higher education and vocational technical education (Abt/West, 1981). Other impacts in the local areas of Nevada/Utah, and to a lesser extent across the western states region, would include increased labor force participation of current area residents and cross-occupational movement to jobs more in demand, i.e., out-migration from traditional sectors of farming and lower paid service industry employment into more highly paid energy or M-X- related jobs. There would also likely be wage escalation in Nevada/Utah, and to a lesser extent, across the western states region as a whole in key occupations identified earlier. Spillover effects into agricultural, mineral extraction, and recreation/tourist-related industries could also occur (Mountain West Research, 1981). The issue of wage escalation and induced prices inflation have been detailed in "Earnings" in this ETR, and hence, will not be repeated here.

#### Full Deployment--Texas/New Mexico (3.1.4.1.2)

This project alternative would locate a first operating base in New Mexico and a second operating base in Texas; principal regional effects would be concentrated in these two states, with some ancillary effects in adjacent states. More northern states within this western region would not experience any significant economic growth as a result of the project under this scenario.

##### Direct Employment (3.1.4.1.2.1)

Total direct employment would peak in 1987 at 29,750 jobs. Table 3.1.4-2 indicates that most of this peak employment would be located in Texas. Subsequent to construction activities, direct employment will decline relatively rapidly, and by 1991, would stabilize at 13,200 persons. Relatively more of the long run employment would be located in New Mexico, the site of the first operating base.

Employment in New Mexico would begin earliest, with 1,150 persons employed in construction in 1982. Construction activities in this state would run eight years

and peak at 6,900 jobs in 1985. Construction in Texas would run only six years, beginning in 1984 and peaking at 11,600 jobs in 1987. Assembly and checkout would also require relatively more employment in New Mexico, beginning in 1983 and running about eight years. Operations employment would begin in 1984, with 1,250 employees at the base in New Mexico. Base employment in Texas would begin two years later. Both bases would reach their long run employment levels by 1989, with operations employment equalling 5,700 persons in Texas and 7,500 persons in New Mexico. In both cases, about 85 percent of operations personnel would comprise military employees.

#### Total M-X Related Employment (3.1.4.1.2.2)

Table 3.1.4.1-1 presents estimates of total project-related employment that indicate the predominance of Texas and New Mexico. Peak total employment in Texas would reach about 40,310 persons in 1988, a figure which is about one percent of the state's baseline nonagricultural employment in that year and about 0.5 percent of total employment in the state in 1985 (Table 2.1.4.4-1). Peak employment in New Mexico would reach almost 28,300 jobs in 1986. Owing to the state's relatively smaller size, this would represent about five percent of the state's baseline non-agricultural employment of 500,060 persons in 1986 and 4 percent of total employment of 663,115 persons in 1985, (Table 2.1.4.4-1). Combined, these two states would comprise 95 percent of total employment generated by M-X in 1986 or 1988.

Other states' share in total employment would be led by California, where total M-X-related employment would peak at roughly 1,200 jobs in 1987. This figure is about one-fourth of total employment generated under full deployment in Nevada/Utah, and it would represent insignificant growth for the state as a whole. The states of Arizona, Colorado, and Washington would rank next in the level of employment impacts from full deployment in Texas/New Mexico. Peak impacts in each of these states would equal about 700 jobs in 1987. Employment growth of this magnitude would represent an insignificant increase and would likely be readily assimilated in each of these states. Remaining states in the region would experience negligible growth, estimated at about 50 jobs for Idaho, Montana, Nevada, and Wyoming, 130 jobs in Oregon, and about 150 jobs in Utah.

In the long run, M-X related employment growth would be even more heavily concentrated in Texas and New Mexico. In 1992, these two states would share in 98 percent of the region's total employment increase of 22,400 jobs. New Mexico, with the first operating base, would experience an increase of total employment equalling 12,100 jobs, a figure which represents only about two percent of the state's baseline nonagricultural employment of 653,700 persons in 1992. In Texas, total employment would equal about 9,900 jobs in 1992, but in such a large industrialized state, this would represent less than 1 percent of the state's baseline nonagricultural employment in that year. Long run employment in California would equal about 200 jobs, while Arizona and Washington would be about the only other two states in the region to experience long run employment growth; employment increases in these two states would be roughly half that experienced in California.

Cumulative impact analysis of M-X and future energy development presents conclusions similar to those reached for the full deployment Nevada/Utah alternative. The WESTPO study indicates the potential for sizeable future

employment in New Mexico in oil and natural gas, coal mining, and non-energy mineral mining and processing. Texas has large deposits of oil and natural gas; future energy-related activities in that state would increase competition for skilled labor. The key difference between Nevada/Utah and Texas/New Mexico, however, lies in the absolutely larger size of Texas and New Mexico minerals industry. Texas, for example, had employment of over 200,000 persons in the mining sector in 1979, a figure which is almost one-half of Nevada's total employment and one-third of Utah's total employment level in 1979 (Table 2.1.4.4-2). Stress in key occupations could still result over the short run, particularly in New Mexico, but would be less disruptive.

#### Split Deployment--Nevada/Utah and Texas/New Mexico (3.1.4.1.3)

Unlike either of the full-deployment options, at the outset, when protective shelter and base construction is underway, employment impacts would be widely distributed across the western region. Over the long run, however, with a first operating base in Nevada and a second operating base in New Mexico, employment impacts would be concentrated in these two states. Relatively minor long-term effects would be observed in the remaining ten states.

##### Direct Employment (3.1.4.1.3.1)

Project employment would begin in 1983, with 1,100 construction workers in Nevada (Table 3.1.4-3). Employment in New Mexico would begin with 550 direct employees in 1984. Texas and Utah would experience negligible direct employment until 1986, when 1,150 employees would be located in Texas and about 3,100 employees in Utah. Direct employment across the four states would peak at 36,000 workers in 1987 with relatively more employment centered in Nevada. With only shelter construction in Texas and Utah, direct employment would be relatively minor, peaking at about 6,600 workers in 1989 in Texas and terminating by 1991, while in Utah, employment would peak at about 7,100 workers in 1989, then decline rapidly, reaching zero by 1991. Long run direct employment would equal about 13,400 workers and would be due solely to base operations. Base employment in Nevada would account for about 7,400 jobs, while in New Mexico, about 6,000 jobs would result.

##### Total M-X-Related Employment (3.1.4.1.3.2)

Total M-X related employment would be most heavily concentrated in the four states where protective shelters and operating bases would be constructed and subsequently put into operation. Total peak employment in Nevada would equal about 22,300 jobs, about 2,300 less than would be experienced under full deployment in Nevada/Utah (Table 3.1.4.1-1). This figure represents about five percent of the state's baseline nonagricultural employment of 452,000 persons in 1986. Peak employment in New Mexico would occur one year later, reaching 24,100 jobs, about 2,400 less than under full deployment in Texas/New Mexico. This figure represents about four percent of the state's baseline nonagricultural employment of 576,200 jobs in 1987. In Texas, peak employment would reach 17,300 jobs, less than half peak total employment with full deployment, Texas/New Mexico. In Utah, peak employment would equal about 18,500 jobs, a figure which is over 11,000 jobs less than the peak total with full deployment, Nevada/Utah.

Consistent with the other project deployment options, California would lead the remaining states in employment growth, with total employment peaking at about 3,700 jobs in 1986. Total employment impacts in the remaining western states would be negligible. At most, peak total impacts in these remaining states would be about 700 jobs in Arizona, Colorado, and Washington.

Subsequent to shelter and base construction, project-related employment would become almost completely concentrated in Nevada and New Mexico, the locations of the two operating bases. By 1992, employment would stabilize in Nevada at about 10,860 jobs and, because of the relatively larger size of the operating base as compared to the full deployment option, would be about 2,200 jobs greater than under full deployment, Nevada/Utah. This long run figure, however, would represent only about two percent of the state's baseline nonagricultural employment of 622,600 jobs in 1992. In New Mexico, total employment would stabilize at about 9,760 jobs in 1992 and, compared to full deployment, Texas/New Mexico, would be about 2,400 jobs less. Long run employment growth in other states would be negligible, with most employment in the states of Texas and California, each experiencing total employment growth of about 600 jobs by 1992.

Cumulative impacts of M-X and energy development projects would be similar in nature to those detailed for the full deployment alternatives. However, the potential for labor market stress would be reduced. Long run M-X-related impacts in Utah would be very minor under split deployment and this would diminish overall demand for skilled labor correspondingly, hence, reducing any economic dislocations in that state. Economic impacts in Nevada and New Mexico would also decline somewhat, given the reduction of project labor requirements for construction employees in each of the two states. Economic dislocation in Texas would be least of the four states. For the western states region as a whole, split deployment would distribute labor requirements and induced industrial growth over a much greater geographic area. By drawing on a larger labor pool and increasing the number of accessible metropolitan economies, this alternative would serve to reduce economic effects as compared to the full deployment alternatives.

## **3.2 INCOME AND EARNINGS**

### **NEVADA/UTAH REGION OF INFLUENCE (3.2.1)**

This section is presented in the Income and Earnings section of Chapter 4 in the FEIS.

### **TEXAS/NEW MEXICO REGION OF INFLUENCE (3.2.2)**

This section is presented in the Income and Earnings section of Chapter 4 in the FEIS.

### **ANALYSIS OF OB AREAS (3.2.3)**

#### **Beryl (3.2.3.1)**

Earnings impact in the Beryl area are closely related to employment effects discussed in Section 3.1.3.1. Table 3.2.3.1-1 presents M-X related earnings by place of work for Alternative 3. Beryl would be the location of the second OB under

Table 3.2.3.1-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN IRON

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH

BASE I AT BERYL, UT (IRON CO.)

BASE II AT ELY, NV (WHITE PINE CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	52.9	114.0	115.0	119.7	94.3	75.3	36.3	36.3	8.8	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.6	3.6	37.0	78.8	106.9	106.9	107.0	107.0	107.0	107.0	107.0	107.0
INDIRECT	15.6	40.0	56.6	78.0	80.4	72.9	57.1	34.9	25.1	22.5	22.1	22.0	22.0
TOTAL	68.5	154.5	175.2	234.6	253.4	255.1	200.2	178.2	140.9	129.5	129.1	129.1	129.1

SOURCE: HDR SCIENCES, 22-SEP-81

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Alternative 1 and the first OB under Alternative 3. Beryl and other communities in Iron County would also be significantly affected by Alternative 4, for which Beryl also would be the location of the first operating base, but these effects would be very similar to those of Alternative 3. Under other deployment options (the Proposed Action, Alternatives 2, 5, 6, 7, and 8), county-level impacts result solely from indirect expansion of supplier industries. Tables which present change in earnings from all deployment options are presented in ETR-2E.

For the location of a first operating base, Table 3.2.3.1-2 indicates that earnings would peak at \$255 million (FY 1980 dollars) in 1987, more than three times 1979 county earnings of \$75.4 million (FY 1980 dollars). Over the long term, annual projected earnings would decline, then stabilize at about \$130 million. This figure is still almost 200 percent of 1979 earnings in Iron County. Peak effects in the county from the location of a second operating base at Beryl would be significantly less (see ETR-2E). In both cases, however, the county economy would undergo significant changes because of the large-scale growth in earnings.

Other deployment options would result in much smaller impacts in Iron County. For example, under the Proposed Action, earnings would peak at \$11 million over 1986-1988, then decline slightly to a long-term figure of \$10 million. This would be about 13 percent of 1979 earnings levels in Iron County. Only for Alternative 2, where both bases would be located sufficiently far away so as not to induce indirect growth in Iron County, would earnings impacts be negligible.

Much of the county's growth could be expected to occur in Cedar City, though Beryl also is likely to expand sharply as a result of M-X. Boom-type growth would be likely with attendant wage and price inflation, particularly during the construction phase. Historically, the county has been rural, with relatively small commercial and industrial sectors. It has grown fairly rapidly in the past five years, with annual real earnings growth of 5.0 percent over the 1974-1979 period. With its 1979 per capita income of \$5,358, much lower than the state or nation, a rapid influx of high-paid construction workers followed by the direct operations personnel would produce a significant change in the size and structure of the county's economy.

Base operations in Iron County would impact Beaver, Lincoln, and Washington counties as well. Table 3.2.3.1-2 presents earnings impact estimates resulting from Alternative 3 for these three additional counties. Additional tables for all deployment options are presented in ETR-2E. In Beaver and Lincoln counties, greatest impacts would be from DDA construction. Earnings impacts in Washington County would result from job creation in industries supplying goods and services to direct project workers in Iron County. In Beaver and Washington counties long-term earnings would range from \$4 million to \$5 million. In Beaver county an annual earnings figure of \$4 million would be over 23 percent of 1979 county earnings, while in Washington County \$5 million would be about seven percent of that county's 1979 earnings. Long-term earnings in Lincoln County under Alternative 1 are slightly greater than for Alternative 3 and would equal almost \$4 million (15 percent of 1979 county earnings). Spillover impacts from the base in Iron County would be important to all three counties. Both short-term and long-term adjustments to this economic growth would be required, particularly as prices rise as a result of increased economic activity.



Table 3.2.3.1-2.

Projected direct and indirect M-X-related earnings by county of employment, Iron, Beaver, Washington, and Lincoln counties, Alternative 3, 1983-1991 (millions of FY 1980 dollars).

County and Type of Earnings	1983	1985	1987	1991
Iron County				
Direct (OB)	114.6	156.7	182.2	107.0
Indirect	40.0	78.0	72.9	22.5
Total	154.6	234.7	255.1	129.5
Percent of 1979	204.8	311.0	338.2	171.7
Beaver County				
Direct (DDA)	25.1	68.9	8.3	0.0
Indirect	5.2	11.9	9.5	4.1
Total	30.3	80.8	17.8	4.1
Percent of 1979	173.1	461.5	101.9	23.5
Washington County				
Direct (DDA)	--	--	--	--
Indirect	3.0	6.7	9.0	5.3
Total	3.0	6.7	9.0	5.3
Percent of 1979	3.8	8.4	11.4	6.7
Lincoln County				
Direct (DDA)	15.5	73.9	22.3	0.0
Indirect	5.1	16.8	14.5	3.2
Total	20.6	90.7	36.8	3.2
Percent of 1979	104.8	462.8	187.6	16.3

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Source: HDR Sciences, 1981.

### Coyote Spring (3.2.3.2)

Earnings impacts in the Coyote Spring area are closely related to employment effects discussed in Section 3.1.3.2. Table 3.2.3.2-1 presents M-X-related earnings in Clark County by place of work for the Proposed Action. Data for all alternatives are presented in ETR-2C.

The Proposed Action would have the largest earnings impacts on Clark County. Alternatives 1, 2, and 8 (split deployment) would be very similar to the Proposed Action, since the first OB would be at Coyote Spring. Alternatives 4 and 6 would have smaller impacts, since the second OB would be at Coyote Spring. Alternatives 3 and 5 would impact Clark County through spillover growth impacts as industries in the county expand in response to increased demand for goods and services from the project.

For the location of a first operating base, Table 3.2.3.2-1 indicates that Clark County M-X-related earnings would peak at \$363 million in 1987, roughly ten percent of 1979 total county earnings (FY 1980 dollars). Over the long term, annual earnings growth would equal almost \$170 million, which is about five percent of 1979 total earnings. Siting the second operating base, rather than the first, in Clark County would reduce peak earnings by over \$100 million compared to the Proposed Action. This lower figure is about seven percent of 1979 county earnings. The difference between the two bases is reduced over the long term. A second operating base would create annual growth in earnings equal to almost \$127 million, a figure which is three-fourths that under the Proposed Action. Without an operating base in the county, earnings from indirect employment growth would peak at \$13 million in 1986, then decline to about \$0.6 million over the long term. In either case, these latter figures are very small compared to 1979 county earnings.

Clark County has been characterized by very rapid growth in earnings, 8.3 percent in real (1979) dollars over the 1974-1979 period, with most growth centered in services. Adjustment to the earnings growth of the magnitude projected with M-X would be relatively less than the adjustment required in other ROI counties. However, locating a base in the county could generate some wage and price inflation, particularly in the short term and in the construction trades. Although the county had a per capita income of \$10,266 in 1979, the highest in the Nevada/Utah ROI, high M-X construction wage rates would increase it further.

Lincoln County would experience earnings growth from all project alternatives, particularly those with an operating base in Clark County. DDA construction and assembly and checkout employees would be employed in Lincoln County as would workers in industries supplying goods and services to direct project workers (including base personnel in Clark County). Under the Proposed Action and Alternative 4, earnings peak at about \$190 million in 1985 (Table 3.2.3.2-2). Peak impacts result principally from DDA construction--\$160 million of the \$190 million--and indirect earnings account for the rest. This peak figure is almost 1,000 percent of 1979 earnings in Lincoln County of \$19.6 million (FY 1980 dollars). Other basing options, including split deployment, would create peak earnings of this magnitude, with the exception of Alternatives 3 and 5 where peak earnings equal about \$100 million in 1989, a result of a longer DDA construction cycle in the county (see ETR-2G). Long-term earnings figures under all options would be significantly less than the peak, declining to less than \$2 million by 1991.

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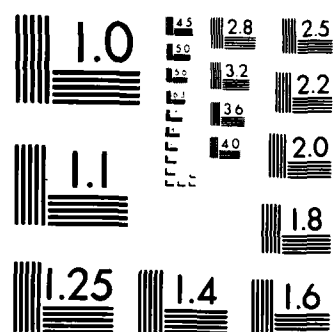
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Table 3.2.3.2-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN CLARK

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH

BASE I AT COVOTE SPRING, NV (CLARK CO.)

BASE II AT MILFORD, UT (BEAVER CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	7.0	12.5	15.0	7.5	5.0	5.0	5.0	5.0	2.5	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	52.9	114.0	115.0	119.7	89.3	70.3	31.3	31.3	6.3	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.6	3.6	37.0	78.8	106.9	106.9	107.0	107.0	107.0	107.0	107.0	107.0
INDIRECT	29.2	76.6	115.1	169.5	189.4	181.1	145.2	98.9	69.4	61.8	61.2	61.2	61.2
TOTAL	89.1	203.7	248.7	333.6	362.5	363.3	288.4	242.2	189.1	168.9	168.2	168.2	168.2

SOURCE: HDR SCIENCES, 22-SEP-81

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Table 3.2.3.2-2.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN LINCOLN

PROPOSED ACTION: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT COYTE SPRING, NV (CLARK CO.)  
BASE II AT MILFORD, UT (BEAVER CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	7.6	32.8	70.4	160.5	111.7	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INDIRECT	1.7	6.7	13.9	30.2	28.0	11.9	5.1	3.2	1.9	1.6	1.5	1.5	1.5
TOTAL	9.3	39.5	84.3	190.6	139.7	19.4	5.1	3.2	1.9	1.6	1.5	1.5	1.5

SOURCE: HDR SCIENCES, 22-SEP-81

CT

for the Proposed Action and about \$4 million for Alternative 4. This is about 8 to 20 percent, respectively, of 1979 county earnings (in FY 1980 dollars). All long-term earnings would result from indirect employment in the county. The effect of M-X on county-level earnings would create a "boom-bust" cycle; DDA-related earnings growth would last only six to eight years. In any of the options, Lincoln County's economy would be significantly affected over the short term as widespread rapid escalation of wages and price levels result.

#### **Delta (3.2.3.3)**

Earnings impacts in the Delta area are closely related to employment effects discussed in Section 3.1.3.3. Table 3.2.3.3-1 presents M-X-related earnings by place of work for Alternative 2, where Delta would be the location of a second operating base and DDA facilities would be sited in the county. Under other deployment options, only DDA construction would impact earnings in Millard County. These effects are comparable to those listed in Table 3.2.3.3-1. Tables presenting earnings impacts for all basing options are contained in ETR-2H. Peak earnings under Alternative 2 would be \$272 million in 1986, more than eight times the level of 1979 earnings of \$33.4 million (FY 1980 dollars) in the county. Of this peak increase, almost one-half would be attributable to DDA construction and would be felt in the county under the Proposed Action and Alternatives 1, 2, 4, and 6. Differences in the DDA construction cycle create peak earnings under Alternatives 3, 5, and 8 (split deployment), which would be much less, about \$190 million in 1985 for Alternatives 3 and 5 and \$209 million in 1987 under split deployment. The table indicates that as employment declines to operational levels and the mix of occupations shifts from construction to primarily military and civilian base employees, project-related earnings would decline to \$97 million by 1992. This figure is still almost three times 1979 baseline earnings. In an economy characterized by heavy dependence on agriculture and government and little real earnings growth (1.0 percent per year over the 1974-1979 period), earnings generated by M-X would create significant boom-type problems. Further, under all other deployment options, M-X-related growth would be particularly rapid for seven to eight years, creating "boom-bust" problems. Adjustment to this growth and decline would be very difficult.

Spillover effects from base construction and operation in Millard County would probably impact Beaver and Juab counties. Table 3.2.3.3-2 presents projected M-X-related earnings by place of work in these two counties. Additional earnings tables for all other deployment options for Beaver and Juab counties are presented in ETR-2B and ETR-2F. Of the two adjacent counties, Juab would receive the greater stimulus from the Delta OB. Both counties would be locations for DDA facilities, with construction activity simultaneous with OB activity. Under Alternative 2, earnings would peak at \$76 million in Beaver County in 1987, over 430-percent of 1979 earnings in that county, then decline to zero by 1990. Almost 90 percent of this peak figure results from DDA construction. All other full deployment options in Nevada/Utah create long-term growth in Beaver County. Peak earnings in Juab County would be greater than in Beaver County, about \$102 million in 1987-1988 under Alternative 2. This is about 480 percent of 1979 county earnings. Long-term impacts in Juab County result from growth in supplier industries and they would be about \$1 million by 1991, about six percent of 1979 earnings in Juab County. Alternative 2 alone provides long-term growth for Juab County.

Table 3.2.3.3-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN MILLARD

ALTERNATIVE 2: FULL DEPLOYMENT - NEVADA/UTAH  
 BASE I AT COYOTE SPRING, NV (CLARK CO.)  
 BASE II AT DELTA, UT (MILLARD CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	7.3	30.3	70.5	140.5	132.4	81.9	13.1	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	6.6	69.7	80.0	71.7	26.6	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.4	3.5	26.8	61.8	76.6	76.6	76.6	76.6	76.6	76.6
INDIRECT	0.6	2.7	13.5	40.2	56.3	66.6	60.3	49.7	37.9	23.7	20.2	20.0	20.0
TOTAL	7.9	33.0	90.7	250.8	272.2	247.0	161.9	126.3	114.5	100.3	96.8	96.6	96.6

SOURCE: HDR SCIENCES, 22-SEP-81

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Table 3.2.3.3-2. Projected direct and indirect M-X-related earnings by county of employment, Millard, Juab, and Beaver counties, Alternative 2, 1983-1991 (millions of FY 1980 dollars).

County and Type of Earnings	1983	1985	1987	1991
<b>Millard County</b>				
Direct (OB and DDA)	30.3	210.6	180.4	76.6
Indirect	2.7	40.2	66.6	23.7
Total	33.0	250.8	247.0	100.3
Percent of 1979	99.1	751.8	740.5	300.6
<b>Juab County</b>				
Direct (DAA)	--	14.3	93.3	--
Indirect	0.2	2.4	8.4	1.3
Total	0.2	16.7	101.7	1.3
Percent of 1979	1.1	78.0	475.5	5.9
<b>Beaver County</b>				
Direct (DDA)	16.4	67.9	8.1	--
Indirect	1.7	7.8	3.7	--
Total	18.1	75.7	11.8	--
Percent of 1979	103.3	432.1	67.7	--

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Source: HDR Sciences, based on data from U.S. Air Force, state agencies, and other sources. See ETR-27.

In both Beaver and Juab counties, short-term growth problems would be created by an OB at Delta. Economic changes would probably occur as a result of "boom-bust" growth in Juab County.

#### **Ely (3.2.3.4)**

Earnings impacts in the Ely area are closely related to employment effects discussed in Section 3.1.3.4. Table 3.2.3.4-1 presents estimates of earnings by place of work for Alternative 3, for which Ely would be the location of a second operating base and DDA facilities would be sited in the county. Impacts on earnings in White Pine County from other alternatives are given in ETR-2L. A second operating base would also be located near Ely under Alternative 5, but effects here are identical to those under Alternative 3.

The table indicates that M-X-related earnings would peak at about \$300 million in 1987. Growth of this magnitude would represent a net increase of about 630 percent over the county's 1979 earnings of \$47.4 million (FY 1980 dollars). Of this increase, about one-third would be direct earnings from DDA construction and would be felt in the county under all full deployment options in Nevada/Utah. Timing of impacts from DDA construction varies slightly from one alternative to another. Peak impacts would be felt one year later, in 1988, under the Proposed Action and Alternatives 1, 2, 4, and 6. Under split deployment, only spillover growth from adjacent counties affects White Pine County. Earnings would peak at \$29 million in 1985-1986, but decline to zero by 1990. Long-term effects occur only when White Pine County is the location of an operating base (Alternatives 3 and 5). Table 3.2.3.4-1 indicates that with a second operating base located there, long-term earnings would stabilize in White Pine County at about \$102 million by 1992. This figure is about 215 percent of total 1979 earnings. About 75 percent of the long-term figure would be directly attributable to base payrolls.

Total earnings in White Pine County remained nearly constant in nominal terms between 1974 and 1979, and have declines in real terms over this period. The county has been dominated by mining and government sectors, leaving it without the diverse commercial sector needed to supply consumption demands of project workers. This is likely to increase the county's adjustment problems. Rapid escalation of wages and some prices would be probable with the influx of high-paid workers into the county. A more stable long-term price level would be reached after the boom of base construction has passed.

#### **Milford (3.2.3.5)**

Earnings impacts in Beaver County are closely related to the employment effects discussed in Section 3.1.3.5. Beaver County would experience operating base-related impacts under the Proposed Action and Alternatives 5 and 6. Under Alternatives 5 and 6, Milford would be the site of the first operating base, and under the Proposed Action it would be the location of the second operating base. Under all deployment options, the county would be the site of DDA construction and its associated short-term activity. Table 3.2.3.5-1 presents M-X-related earnings projections by place of work for Alternative 5. Alternative 6 is very similar to Alternative 5, while the impacts of the Proposed Action would be significantly less. All Nevada/Utah full deployment options would affect Beaver County earnings because of DDA construction, and at levels comparable to the DDA impacts shown

Table 3.2.3.4-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN WHITE PINE

ALTERNATIVE 3: FULL DEPLOYMENT - NEVADA/UTAH

BASE I AT BERYL, UT (IRCV CO.)

BASE II AT ELY, NV (WHITE PINE CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	17.7	30.3	67.1	110.6	26.1	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	6.6	69.7	80.0	71.7	26.6	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.4	3.5	26.8	61.8	76.6	76.6	76.6	76.6	76.6	76.6
INDIRECT	0.1	0.7	12.9	42.3	67.0	91.1	77.5	58.4	45.3	29.6	25.8	25.7	25.7
TOTAL	0.1	0.7	37.3	142.6	217.6	300.3	192.1	135.0	121.9	106.2	102.4	102.3	102.3

SOURCE: HDR SCIENCES, 22-SEP-81

CT

Table 3.2.3.5-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN BEAVER

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH  
 BASE I AT MILFORD, UT (BEAVER CO.)  
 BASE II AT ELY, NV (WHITE PINE CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	14.5	25.1	13.1	68.9	68.3	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	52.9	114.0	115.0	119.7	94.3	75.3	36.3	36.3	8.8	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.6	3.6	37.0	78.8	106.9	106.9	107.0	107.0	107.0	107.0	107.0	107.0
INDIRECT	15.2	38.5	53.3	77.1	79.8	68.4	52.4	31.2	22.3	19.9	19.6	19.6	19.6
TOTAL	82.6	178.1	185.0	302.6	321.2	258.9	195.5	174.5	138.1	127.0	126.6	126.6	126.6
SOURCE: HDR SCIENCES, 22-SEP-81	CT												

for Alternative 5. In addition, for Alternatives 1, 3, and 4, operating base locations are close enough to Beaver County to induce modest long-term growth in earnings as the county's economy would expand to meet demands from the base. Tables depicting changes in earnings in Beaver County from all basing options are presented in ETR-2B.

As a first operating base, peak earnings would occur in 1986 at \$321 million. Earnings would then decline and stabilize, with long-term impacts of \$127 million annually. Both these levels represent significant increases over present levels: eighteen and seven times the 1979 level of \$17.5 million (1980 dollars), respectively. The largest source of peak M-X-related earnings under Alternative 5 is base construction (almost 30 percent), followed by indirect earnings and earnings by base operations personnel (each 25 percent) and cluster facilities construction (21 percent). In the long term, however, earnings from the base operations would comprise almost 85 percent of total M-X-related earnings. Under Alternative 6, impacts are very similar, though a different DDA construction cycle lowers peak earnings to \$307 million.

Beaver County would experience significantly lower earnings impacts under the Proposed Action--a peak of \$189 million in 1986, about \$132 million less than under Alternative 5 (see ETR-28). However, this peak figure of \$189 million is almost 11 times 1979 county earnings. Base construction would still be the source of most peak earnings (42 percent). Unlike Alternative 5, however, operation personnel earnings in the peak year would be minor, contributing only two percent of the \$189 million. This is due to a later buildup of operations personnel than with the first OB. DDA construction workers' share would be about 32 percent. Over the long term, a second operating base at Milford would create an annual increase of about \$91 million, a figure which is more than five times the county's 1979 earnings level and about 70 percent of the long-term figure under Alternative 5.

Compared to 1979 earnings of \$17.5 million (1980 dollars), earnings growth in Beaver County under all deployment options would be very large. Both peak and long-term impacts would be extremely large for all alternatives siting an OB at Milford. Further, these impacts would occur in a county characterized by moderate historic growth in real earnings, 3.2 percent per year over the 1974 to 1979 period, and in one with a 1979 per capita income of \$5,563, very low both by Utah and U.S. standards. Very significant growth problems in the county are likely with such a large infusion of earnings over a short period of time. Considerable increases in local land values and earnings in the non-M-X sector are probable as are temporary shortages of some goods, services, and skilled construction labor.

Base operations at Milford would also induce expansion of supplied industries in Iron and Millard counties. Table 3.2.3.5-2 presents M-X-related change in earnings for Alternative 5 in Millard County. Tables describing impacts on earnings under all deployment options are presented in ETR-2E for Iron County and ETR-2H for Millard County.

A first operating base at Milford would create indirect earnings in Iron County of up to \$22 million in 1986-1987. This represents about 30 percent of Iron County's 1979 total earnings. Subsequent to base construction, earnings would decline, then stabilize at about \$13 million by 1991. Locating the second base at Milford would result in peak M-X-related earnings in Iron County of about half of the level

Table 3.2.3.5-2.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN MILLARD

ALTERNATIVE 5: FULL DEPLOYMENT - NEVADA/UTAH  
BASE I AT MILFORD, UT (BEAVER CO.)  
BASE II AT ELY, NV (WHITE PINE CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	12.7	35.1	46.2	173.8	115.9	47.0	75.6	14.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INDIRECT	1.0	3.2	4.6	15.9	15.6	8.9	12.5	7.6	1.4	0.1	0.0	0.0	0.0
TOTAL	13.8	38.3	50.9	189.7	131.5	55.9	88.1	21.6	1.4	0.1	0.0	0.0	0.0

CT

SOURCE: HDR SCIENCES, 22-SEP-81

resulting from locating the first OB at Milford. Long-term earnings from M-X with a second operating base would be about 70 percent (\$10 million) of those with a first operating base.

Millard County would experience no long-term growth in earnings from base operations under either base siting option at Milford. Most impacts on Millard County would result from DDA construction. Table 3.2.3.5-2 indicates that under Alternative 5 peak earnings would reach \$190 million in 1985, a figure almost six times the county's 1979 total earnings. However, by 1991, earnings would decline to zero. Millard County would face a severe "boom-bust" cycle, with no long-term growth projected.

#### **Clovis (3.2.3.6)**

Earnings impacts in Curry County are closely related to employment effects which were discussed in Section 3.1.3.6. Clovis would be the site of a first operating base under alternative 7 and a second operating base under Alternative 8, split deployment. The county is also within the DDA under both full and split deployment, but no construction camps would be located in the county. Since earnings impacts from DDA construction have been estimated on the basis of camp locations, Curry County would not experience direct earnings impacts from DDA worker incomes in the county. Indirect earnings from M-X workers, however, would be very significant.

Under Alternative 7, peak earnings would reach over \$266 million in 1986, as Table 3.2.3.6-1 indicates. About 40 percent of this would be from jobs created in industries expanding to supply direct worker needs. This figure of \$266 million is 116.2 percent of total 1979 county earnings of \$229 million (FY 1980 dollars). Subsequent to base construction, earnings from M-X-related activities would decline, then stabilize at about \$136 million by 1991. In the long term, the contribution of indirect employment would be halved compared to its share of peak earnings. Operations jobs contribute about 80 percent of the county's long-term M-X-related earnings.

Under the split deployment option, Clovis would be the site of the second operating base. M-X-related earnings would peak at about \$190 million in 1987, which is \$75 million less than the peak level forecast for the county under full deployment. The composition of earnings would change under split deployment as well. The share of indirect earnings in the total would increase, with a peak share equal to 47 percent. Long-term earnings would amount to \$120 million, which represents about 52 percent of the county's 1979 earnings and about 88 percent of the long-term level under Alternative 7. In the long term, the indirect contribution falls to about 30 percent of total earnings. This figure is well above the percent comprised by indirect earnings under full deployment.

Roosevelt County would experience spillover growth from base operations at Clovis. Table 3.2.3.6-2 presents earnings impacts by place of work for Roosevelt County for full deployment in Texas/New Mexico. Full deployment impacts would be much greater than split deployment, the result of greater DDA facility construction and associated indirect employment growth. Short-term peak earnings in Roosevelt County, however, would range from \$206 million under full deployment to \$74 million under split deployment. In both cases, indirect earnings comprise

Table 3.2.3.6-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN CURRY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
 BASE I AT CLOVIS, NM (CURRY CO.)  
 BASE II AT DALHART, TX (HARTLEY CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	46.2	93.9	101.6	107.0	81.8	65.2	31.3	31.3	6.3	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.6	3.6	37.0	78.8	106.9	106.9	107.0	107.0	107.0	107.0	107.0	107.0
INDIRECT	18.3	46.6	69.2	98.3	105.7	93.7	71.7	46.5	32.8	29.1	28.7	28.7	28.7
TOTAL	64.5	141.1	174.4	242.2	266.2	265.7	209.8	184.8	146.1	136.1	139.7	139.7	139.7
SOURCE: HDR SCIENCES, 22-SEP-81	CT												



Table 3.2.3.6-2.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN ROOSEVELT

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
 BASE I AT CLOVIS, NM (CURRY CO.)  
 BASE II AT DALHART, TX (HARTLEY CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	4.5	27.3	63.8	133.1	173.3	30.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INDIRECT	3.2	9.1	14.8	25.1	32.9	22.1	13.4	11.5	9.4	8.4	8.3	8.3	8.3
TOTAL	7.7	36.4	78.6	158.2	206.2	52.9	13.4	11.5	9.4	8.4	8.3	8.3	8.3
SOURCE: HDR SCIENCES, 22-SEP-81	CT												

about 16 percent of total peak earnings. Either option would create severe short-term adjustment problems in the county. Under either basing option, however, long-term earnings would be roughly the same, about \$8-9 million annually. Long-term impacts of this magnitude would be 11-12 percent of the county's 1979 earnings of \$74.0 million (FY 1980 dollars). These long-term figures represent induced growth in Roosevelt County resulting from base operations in Curry County.

#### **Dalhart (3.2.3.7)**

Under Alternative 7, Hartley County would be the site of the second operating base. In addition, cluster facilities are located in both Dallam and Hartley counties under both full and split deployment options, though in much smaller numbers with split deployment. Both counties would share in economic expansion induced by DDA and operating base construction; however, most long-term earnings growth would be located in Hartley County as a result of employment on the base. Under split deployment, DDA construction runs only five years, after which M-X-related earnings become zero. Tables in ETR-3B present earnings impacts on Texas counties from full and split deployment.

Under full deployment, the short-term net increase in earnings would peak at \$179 million in Hartley and at \$197 million in Dallam County, both in 1987, as Tables 3.2.3.7-1 and 3.2.3.7-2 indicate. In both cases, growth over 1979 county total earnings would be very great; in Hartley County, peak earnings would be over 71 times as great as the 1979 earnings of \$2.5 million (in FY 1980 dollars), while in Dallam County, peak earnings would equal over five times the 1979 earnings of \$38.9 million (in FY 1980 dollars). In both counties, jobs in supplier industries would contribute about 20 percent of peak earnings. In these small economies, boom growth would result from earnings impacts of this magnitude.

Over the long term, earnings by place of work would decline in Dallam County to a projected level of \$8 million by 1992, due entirely to indirect employment. However, this figure would be still 20 percent of the county's 1979 total earnings. Hartley County, the operating base location, would experience long-term annual earnings equal to \$90 million, almost 36 times the 1979 total earnings. About 85 percent of this long-term total would result from direct base employment. Long-term project-related employment in Hartley County would completely change the size and nature of the county's economic base toward trade and service industries. Significant economic dislocation would result as such a transition is made.

Under the split deployment alternative, though no base is located at Dalhart, short-term effects would occur in both Dallam and Hartley counties because of DDA construction activity. Earnings in Dallam County attributable to M-X would peak in 1989 at \$92 million, about 60 percent of peak DDA construction earnings of \$157 million under full deployment. In Hartley county, earnings would peak at \$60 million in 1987-1988, and would be slightly greater than peak earnings from DDA construction under full deployment. However, indirect earnings are negligible compared to effects under full deployment. By 1991 in Dallam County and 1990 in Hartley County, earnings impacts would decline to zero.

Moore County would experience some indirect economic growth from base construction and operations at Dalhart. Table 3.2.3.7-3 presents M-X-related earnings by place of work in Moore County for Alternative 7. Earnings would peak

Table 3.2.3.7-1.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN HARTLEY

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO

BASE I AT CLOVIS, NM (CURRY CO.)

BASE II AT DALHART, TX (HARTLEY CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	15.2	33.5	54.8	57.4	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	5.8	60.6	69.6	62.5	23.2	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.4	3.5	26.8	61.8	76.6	76.6	76.6	76.6	76.6	76.6
INDIRECT	0.0	1.2	7.1	23.9	32.6	42.4	38.4	27.9	21.3	14.5	12.9	12.7	12.7
TOTAL	0.0	16.4	46.3	139.8	163.2	178.8	123.4	104.5	97.9	91.1	89.5	89.3	89.3

SOURCE: HDR SCIENCES, 22-SEP-81

CT

Table 3.2.3.7-2.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN DALLAM

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO  
 BASE I AT CLOVIS, NM (CURRY CO.)  
 BASE II AT DALHART, TX (HARTLEY CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	8.2	33.8	106.8	98.7	157.1	107.1	5.1	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INDIRECT	0.0	1.3	7.7	22.7	30.6	40.3	35.9	24.6	17.4	9.7	7.8	7.7	7.7
TOTAL	0.0	9.5	41.4	129.4	129.2	197.4	143.0	29.8	17.4	9.7	7.8	7.7	7.7

SOURCE: HDR SCIENCES, 22-SEP-81

CT

Table 3.2.3.7-3.

M-X RELATED EARNINGS, IN MILLIONS OF FY 1980 DOLLARS, IN MOORE

ALTERNATIVE 7: FULL DEPLOYMENT - TEXAS/NEW MEXICO

BASE I AT CLOVIS, NM (CURRY CO.)

BASE II AT DALHART, TX (HARTLEY CO.)

SOURCE OF EARNINGS	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
CLUSTER FACILITIES CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BASE CONSTRUCTION, ASSEMBLY, AND CHECKOUT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OPERATIONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INDIRECT	0.0	0.5	1.5	4.9	6.3	7.8	6.6	4.2	3.2	3.1	3.1	3.1	3.1
TOTAL	0.0	0.5	1.5	4.9	6.3	7.8	6.6	4.2	3.2	3.1	3.1	3.1	3.1

SOURCE: HDR SCIENCES, 22-SEP-81

CT

at almost \$8 million in 1987, while long-term earnings impacts would be \$3 million annually with 1979 earnings of 102.1 million (in FY 1980 dollars). Moore County would experience only modest impacts. Split deployment impacts upon Moore County would be comparable to full deployment impacts in the short term, but would last only about 8 years. Impacts on earnings in Moore County for split deployment are detailed in ETR-3B.

#### **DEMAND, SUPPLY, WAGE ESCALATION FOR CONSTRUCTION CRAFTS (3.2.4)**

##### **Nevada/Utah (3.2.4.1)**

At the time of peak construction (1986) some 18,500 people would be in the construction work force under the Proposed Action. This is a very large construction effort, particularly in view of the limited labor supplies likely to be available in the ROI. Examination of craft-specific labor demand and supply is important in order to anticipate specific problems and devise policies to mitigate them. The potential for labor shortages may exist for certain skills and in varying degrees. Concomitant with any important labor shortages would be pressure for local wage inflation. Detailed examination of craft-specific supply and demand also indicates the extent and nature of anticipated labor in-migration.

The analysis and data presented here are directed to the maximum impact case. That is, the focus is on supply and demand for the peak construction labor demand years. Craft-specific labor supply in each state is derived from estimates of occupational employment in 1985 which are independently produced by each state's Employment Security Department in cooperation with and coordinated by the U.S. Department of Labor. Where peak occupational demand does not coincide with the 1985 forecast, the projected growth rate through 1985 was used to develop estimates for the intervening years or for later years, as necessary. From these, estimates of employment by occupation in the ROI were derived to extend the analysis appropriate to the M-X deployment plan. Occupation projections developed by the states are indicative of trends in occupational growth and are used in the same spirit in the analysis below. No allowance is made for cyclical fluctuations in the economy, though the coincidence of cyclical events with the M-X construction program could significantly alter the conclusions presented.

Tables 3.2.4.1-1 and 3.2.4.1-2 present projections of craft-specific employment for the states of Nevada and Utah. Table 3.2.4.1-3 presents selected construction craft labor peak year demands and associated supply projections in these years for each selected occupation in the bi-state region and the 12-county ROI. Estimates of the labor available in the ROI and the peak year excess demand are also presented. Labor availability estimates in the ROI are derived by assuming ten percent of the total craft employment can be hired for M-X, a proportion that is used as a proxy for the degree of flexibility in the labor supply.

Other reasonable proportions could be applied but would not change the major results in any substantial way. The use of this fraction means that M-X construction could employ around ten percent of the estimated craftsmen without significant labor market repercussions such as wage inflation or substantial in-migration of labor. This flexibility of supply can come from a variety of local sources, including:

Table 3.2.4.1-1. Projected employment by occupation, selected craft labor categories, Nevada.

Craft	1970	1976	1982	1983	1985
Carpenters <sup>4,7</sup>	2,522	3,089	4,207	4,393	4,766
Electricians <sup>4</sup>	1,305	2,064	2,837	2,966	3,224
Iron workers <sup>1</sup>	898	1,342	2,034	2,151	2,381
Millwrights	34	81	105	109	117
Cement masons <sup>2</sup>	524	681	1,005	1,059	1,167
Operating engineers <sup>3</sup>	1,852	2,015	2,840	2,978	3,253
Painters <sup>4</sup>	936	1,235	1,654	1,724	1,864
Pipefitters/plumbers <sup>4</sup>	827	1,075	1,560	1,640	1,802
Plasterers <sup>4,5</sup>	262	412	642	680	756
Teamsters <sup>6</sup>	3,358	4,062	5,217	5,409	5,794
Tile setters	56	79	92	94	98
Laborers <sup>8</sup>	4,614	5,012	6,686	6,967	7,525
Camp and kitchen <sup>9</sup>	26,157	34,545	51,285	54,076	59,656

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<sup>1</sup> Structural metal craft workers, welders, and flame cutters.

<sup>2</sup> Brick and stone masons and apprentices, cement and concrete finishers.

<sup>3</sup> Bulldozer operators; excavating, grading, and machine operators.

<sup>4</sup> Includes apprentices.

<sup>5</sup> Includes drywall installers, and lathers.

<sup>6</sup> Truck drivers.

<sup>7</sup> Includes carpenters' helpers.

<sup>8</sup> Construction laborers, except carpenters' helpers; vehicle washers; warehouse and other laborers.

<sup>9</sup> Food and cleaning service workers.

Source: Nevada State Employment Development Department, (undated).

Table 3.2.4.1-2. Projected employment by occupation,  
selected craft labor categories,  
Utah.

Craft	1980	1982	1985
Carpenters <sup>1</sup>	9,390	11,030	14,430
Electricians <sup>2</sup>	3,310	3,810	4,830
Iron workers <sup>3</sup>	4,640	5,160	6,130
Millwrights	470	520	610
Cement masons <sup>1</sup>	1,620	1,940	2,520
Operating engineers <sup>4</sup>	5,210	5,950	7,420
Painters <sup>5</sup>	1,970	2,250	2,810
Pipefitters/plumbers <sup>6</sup>	2,960	3,430	4,390
Plasterers <sup>7</sup>	1,480	1,750	2,230
Teamsters <sup>8</sup>	13,430	N/A	17,650
Tile setters	180	210	260
Laborers <sup>9</sup>	1,000	N/A	1,540
Camp and kitchen <sup>10</sup>	52,320	58,600	69,510

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<sup>1</sup>Includes helpers.

<sup>2</sup>Includes electrician helpers.

<sup>3</sup>Structural steel and reinforcing iron workers; welders and flame cutters; and fitters.

<sup>4</sup>Includes heavy equipment operator; and crane, derrick, and hoist operators.

<sup>5</sup>Painter - maintenance, and painter helpers.

<sup>6</sup>Includes pipelayers.

<sup>7</sup>Plasterers, lathers helpers; dry wall installers.

<sup>8</sup>Truck drivers (Utah Department of Employment Security, "Utah Occupational Employment Projections, 1980-1985," June 1980).

<sup>9</sup>Other construction helpers (Utah Department of Employment Security, "Utah Occupational Employment Projections, 1980-1985," June 1980).

<sup>10</sup>Custodial services; quantity food occupations.

Source: Utah Department of Employment Security, "Utah Job Outlook for Vocational/Technical Occupations, Statewide and Planning Districts, 1980-1985," March 1980.



Table 3.2.4.1-3. Selected construction labor demand and supply, Nevada/Utah ROI.

Occupation	Selected M-X Construction Labor Demand (Year) <sup>1</sup>	Projected Bi-State Employment	Projected 24-County ROI Employment	Available ROI Labor Pool <sup>2</sup>	Peak Year Excess Demand <sup>3</sup>	
					Number	Percent
Carpenters	632.5 (1985)	19,196	11,902	1,190	--	--
Electricians	1,385.8 (1986)	8,634	5,353	535	851	15.9
Iron workers	1,204.0 (1985)	8,511	5,277	528	676	12.8
Millwrights	133.4 (1986)	770	477	48	35	17.8
Cement masons	46.0 (1985)	3,687	2,286	229	--	--
Operating engineers	3,477.3 (1986)	11,341	7,031	703	2,774	39.5
Painters	57.5 (1986)	4,969	3,081	308	--	--
Pipefitters/plumbers	166.8 (1985)	6,192	3,839	384	--	--
Plasterers	0.8 (1986)	3,232	2,004	200	--	--
Teamsters	1,161.0 (1986)	24,650	15,283	1,528	--	--
Tile setters	10.3 (1983)	319	197	20	--	--
Laborers	2,519.3 (1985)	9,065	5,620	562	1,957	34.8
Camp and kitchen	2,875.1 (1986)	136,601	84,693	8,469	--	--

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<sup>1</sup> Does not include repair and service, clerical/professional, security, overhead, and other miscellaneous crafts; Corps of Engineers (1,506.3 man-years, 1986). Pile drivers included in operating engineers. Track crew and contingency labor requirements allocated over all occupation categories, based upon peak year occupational distribution.

<sup>2</sup> Assumes 10 percent of labor pool available for M-X employment.

<sup>3</sup> Excess demand is craft labor requirements less available ROI labor; percent equals excess demand divided by total ROI employment.

Sources: U.S. Air Force, AFRCE/MX, Task Force for Manpower Requirements, "Craft Study," Attachment 6, 19 March 1981, and HDR Sciences, based on information from the Nevada Employment Security Department and the Utah Department of Employment Security.

- o Reemployment of unemployed craftsman;
- o Interindustry mobility of labor (e.g., unskilled labor upgraded and trained for truck driving);
- o Labor force re-entry (e.g., some persons with relevant skills recently retired or not currently looking for work may be induced to accept M-X employment or replace those who do in other occupations);
- o Displacement of competing labor demand. Non-M-X projects that may demand some of the same types of craftsmen may be delayed or cancelled in view of a "tight" labor market, thus representing a new freeing up of labor. This can take place even without actual wage inflation as plans are reevaluated and/or delayed if the alternative is a necessary bidding up of the wage rate.

It is likely that virtually all of the project needs for carpenters, cement masons, painters, pipefitters/plumbers, plasterers, truck drivers (teamsters), tilersetters, and camp/kitchen workers can be filled locally. Significant numbers of ironworkers, electricians, millwrights, operating engineers, and laborers would have to be imported into the region. Much of this effect, however, would be due to the inclusion of the labor pools in the Salt Lake and Las Vegas areas where the majority of the labor pool is located. Workers maintaining their principal residences in these areas while commuting on a weekly basis to the job sites can be anticipated. Most critical will be operating engineers where approximately 2,800 may have to be recruited outside the ROI. These estimates represent the maximum problem situation of peak project demands. Preceding and subsequent project construction years should provide substantially less difficulty and allow transition time to achieve employment targets.

Several qualitative conclusions can be drawn from this analysis.

- o In-migration of skilled construction workers will likely be dominated by operating engineers and to a lesser extent, electricians and ironworkers. With appropriate training, much of this potential in-migration could be avoided.
- o Large numbers of laborers are unavailable in the construction area. While the estimated available supply does not include farm laborers, this labor source may be expected to cross over the the construction sector with significant repercussions to be felt in existing farm and ranching activities.

The impacts of this excess demand for labor on construction wages depend on the degree of labor mobility. In the extreme case of no labor mobility, a rise in labor demand, such as for M-X construction, will result in virtually no additional labor supply and rapidly rising wage rates. The other extreme case is total or perfect mobility, where any increase in the demand for labor is instantly matched with an adequate increase in supply and no wage escalation. Reality lies between these extremes.

Conditions necessary to achieve total mobility are: 1) full information available to workers regarding job wages, hours, and working conditions, and 2) costless entry into the expanding labor market. In reality, neither of these conditions is ever fully met, and consequently, a rise in labor demand is commonly associated with both rising employment and rising wage rates. Ignorance of job opportunities is common, and changing employers is anything but costless for the worker. Labor mobility can be geographic, between industries, between occupations, between employers, and between labor force participation and non-participation. Each and every type of mobility has cost associated with it under the best of circumstances and the higher these costs the higher wages must rise to overcome them and bring forth additional supplies of labor. Moreover, there are institutional barriers to mobility of labor such as those exemplified by union hiring hall practices and employer discrimination.

Construction craft unions with jurisdiction over a job site are pledged to provide the "needed" number of craft journeymen desired by the contractor. This obligation is part of the quid-pro-quo of the collective bargaining agreement. On large construction projects, the union often exhausts the local supply of craft journeymen before satisfying the manning requirements of the job. It is common practice under these circumstances, for local union officers to contact other union locals in nearby areas to recruit additional labor. Journeymen obtained in this manner frequently are required to spend considerable time and money commuting to the job site, and consequently the recruiting effort may not be successful unless there is considerable slack in employment. Thus, on some large construction projects, the call for journeymen from nearby union locals is still insufficient to meet demand. At this point, the contractor is faced with a variety of options. He can, under typical construction labor contracts, hire nonunion labor to meet his requirements and thereby invoke the displeasure of the union. Another alternative is to offer added monetary inducements to make long distance commuting desirable.

Some large contractors or owners will attempt to avoid this result by placing pressure on the union at the national level to fulfill the local unions' labor supply obligations. While this may be helpful for some employers, it is used reluctantly by contractors who must maintain a continuing working relationship with the union and/or locals affected. Moreover, in practice, the results are quite mixed. Effective cooperation has been experienced with national officials of the United Association (plumbers/pipefitters), whereas similar efforts with some other construction craft unions have not been very successful. More often, the contractor will elect to increase the monetary inducement to make travel more attractive (Dennehy, 1980).

There are a wide variety of devices employed to attract traveling journeymen. Since wage rates are stipulated by the collective bargaining agreement, direct wage increases are typically not used, and other means become necessary. The most obvious method is to pay workers a mileage or per diem rate in addition to their wages. Another frequently used technique is to offer scheduled overtime employment. By adjusting the mileage rate or the level of overtime, the employer usually can attract sufficient skilled labor to meet his demands. Additional problems can be created, however, since extensive use of travelers or overtime work frequently results in increased labor turnover rates and absenteeism. Moreover, scheduled overtime is often found to become self-defeating after a short period of time as labor productivity declines and costs rise.

Large construction projects on remote sites where the union is unable to supply sufficient labor and the contractor is unwilling to go outside the union or apply pressure to the national union face almost predictable labor cost escalations, at least for some critical crafts. That is not to say they will experience delays in construction due to labor shortages, but most likely their labor costs will rise.

Another alternative course of action in the face of an anticipated shortage of labor in a particular craft is to undertake to train or upgrade local workers. This is a primary strategy used to many nonunion employers. Unionized employers would find it useful to secure the cooperation of the local unions for an effective training program to be implemented. It is not usually in the union's interest to encourage training programs to expand the supply of locally available trained union labor, especially if the construction project is of short duration and is large relative to the local supply of labor. The project completion in that case will likely saturate the local area with trained but unemployed craftsmen to compete with existing union members for declining job opportunities.

The unavailability of sufficient skilled labor are not frequently cited as very prominent reasons for significant construction delays. This suggests that contractors are able to overcome specific local labor shortages through one of several of the above devices. The question is one of costs. Indeed, as one looks at the availability of craft labor there is a sufficient supply for a given project depending on how far journeymen are willing to travel and how willing the contractor is to induce them to travel.

The assessment of construction labor supply and demand in this report leads to the conclusion that for a number of craft groups there is likely to be an excess demand at peak and at near-peak construction activity. This raises the probability of labor market pressure to escalate wages in the construction industry and elsewhere.

The purpose of this section is to arrive at some preliminary estimates of the range of construction wage increases that may be anticipated. The excess demand by craft and its proportion of the ROI supply of relevant craftsmen is taken from the preceding analysis. A range of labor supply elasticity coefficients was selected and the M-X-induced increase in the current wage was calculated. Consequently, the resulting estimates reflect only a guide to a range of wage increases that are assumed to respond primarily to the degree of labor market excess demand. It is in this spirit and with these limitations that these estimates should be viewed.

The following definitions were used:

Excess Demand - The number of workers demanded at peak construction employment less the number of workers estimated to be available to work on the project (ten percent of projected employment is used as a proxy to reflect labor flexibility due to unemployment, labor mobility, and competitive project displacement).

Elasticity Coefficient - Ratio of the proportionate change in labor supplied, divided by the proportionate change in the wage rate necessary to achieve the changed labor supply.

Wage Rate - Straight-time wage plus selected benefits.

Wage Escalation - A rise in the wage rate due to an increase in labor demand relative to supply. It is a rise in construction wages relative to other wages and prices.

The relationship between excess labor demand, labor response, and changing wage rates is determined by the wage elasticity of labor supply. For example, an excess labor demand of, say, five percent would require a five percent increase in the quantity of labor supplied to satisfy it. The elasticity coefficient indicates the percent increase in wage necessary to bring forth more labor. If the elasticity coefficient is 1.5, then to achieve a five percent increase in labor supply wages must rise 3.3 percent. Actually trying to estimate labor supply elasticities is very complex, and generally results in estimates that are not transferable (i.e., unique to the data used for estimating them). Consequently, this analysis provides several plausible coefficients to give some idea of the range of wage increase possibilities. Each elasticity assumption is not equally probable. For example, teamsters are highly interchangeable between industries, and the skills are not difficult to learn compared to many other construction crafts (e.g., pipefitters). Consequently, teamsters would display a higher elasticity of supply than pipefitters.

Table 3.2.4.1-4 sets forth the wage rates by affected occupation, and estimates of a range of possible escalated wage rates under several possible supply elasticity conditions. It is clear that the pressure on wages will be heavy for operating engineers and laborers but considerably smaller pressure will exist for the remaining occupations. Wage increases in one craft cannot be considered in isolation from wages in other crafts, since considerable efforts are made by the craft unions to maintain traditional wage relationships. No such interaction is built into the present estimates. Also, it should again be emphasized that the potential wage escalations presented in Table 3.2.4.1-4 may appear in a variety of forms and not just as increases in the workers' hourly wage rate. Increases in wage rates under the full deployment scenario in Nevada/Utah for selected crafts range from 8.5 percent increases for ironworkers (assuming a labor supply elasticity of 1.5) to almost an 80 percent increase for operating engineers (assuming a labor supply elasticity of 0.5).

#### **Texas/New Mexico (3.2.4.2)**

Tables 3.2.4.2-1 through 3.2.4.2-4 present selected construction craft labor demand, supply, and wage escalation estimates for the full deployment alternative in Texas/New Mexico. The same analysis, as well as caveats and assumptions that were employed for the Nevada/Utah region, are applied here. The principal difference between the two regions is the smaller population centers within the region of influence in the Texas/New Mexico region. Construction craft labor supply is thus limited, and full deployment in Texas/New Mexico may pose severe wage escalation problems. However, weekly or longer commuters would be anticipated from outlying metropolitan areas such as Dallas-Fort Worth or Albuquerque, which would reduce the impact estimates presented here.

Substantial shortfalls in labor supply are anticipated in the Texas/New Mexico ROI. Over 3,000 operating engineers, 1,100 electricians, and 1,000 truck drivers (teamsters) would be needed over and above the available supply in the peak years.

Table 3.2.4.1-4. Estimates of wage escalation due to M-X-related excess peak labor demand, selected construction crafts, Nevada/Utah, full deployment.

Occupation	Wage Rate <sup>1</sup>	Selected Labor Supply Elasticity Coefficient		
		0.5	1.0	1.5
Electricians	\$20.24	\$26.68	\$23.46	\$22.39
Iron workers	17.68	22.21	19.94	19.19
Millwrights	15.84	21.48	18.66	17.72
Operating engineers	18.14	32.47	25.30	22.92
Laborers	12.04	20.42	16.23	14.83

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<sup>1</sup>FY 1980 dollars. See ETR-27, Economic Model, for derivation of wage rate estimates

Source: HDR Sciences.

Table 3.2.4.2-1. Projected employment by occupation,  
selected craft labor, Texas.

Craft	1974	1978	1985
Carpenters <sup>1,2</sup>	79,800	86,200	97,300
Electricians <sup>1</sup>	30,200	34,700	42,400
Iron workers <sup>3</sup>	58,500	67,700	83,300
Millwrights	3,000	3,200	4,000
Cement masons <sup>4,1</sup>	17,500	19,900	23,600
Operatring engineers <sup>5</sup>	39,700	46,000	56,300
Painters <sup>1</sup>	35,800	37,800	41,900
Pipefitters/plumbers <sup>1</sup>	26,600	31,400	38,800
Plasterers <sup>1,6</sup>	41,300	43,800	48,700
Teamsters <sup>7</sup>	97,600	101,200	108,200
Tile setters	2,900	3,200	3,500
Laborers <sup>8</sup>	62,100	65,700	73,200
Camp and kitchen <sup>9</sup>	314,300	344,300	400,600

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<sup>1</sup>Includes apprentices.

<sup>2</sup>Includes helpers.

<sup>3</sup>Structural metal craft workers, flame cutters, and welders.

<sup>4</sup>Brick and stone masons, cement and concrete finishers.

<sup>5</sup>Bulldozer operators, excavating and grading machine operators, crane, derrick, and hoist operators.

<sup>6</sup>Includes drywall installers and lathers.

<sup>7</sup>Truck drivers.

<sup>8</sup>Construction laborers, except carpenters' helpers.

<sup>9</sup>Cleaning service and food service workers.

Source: Texas Employment Commission, "Job Scene 1985, Employment Projections by Specific Industries and Occupations," September 1977.

Table 3.2.4.2-2. Projected employment  
by occupation, selected  
craft labor, New Mexico.

Craft	1979	1985
Carpenters	5,000	7,150
Electricians	2,850	4,375
Iron workers <sup>1</sup>	3,064	4,350
Millwrights	175	250
Cement masons <sup>2</sup>	1,600	2,450
Operating engineers <sup>3</sup>	5,650	7,875
Painters	1,425	2,075
Pipefitters/plumbers	2,375	3,475
Plasterers <sup>4</sup>	1,375	2,200
Teamsters <sup>5</sup>	8,650	11,575
Tile setters	25	50
Laborers <sup>6</sup>	6,850	9,925
Camp and kitchens <sup>7</sup>	43,575	48,075

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<sup>1</sup> Structural steel workers, welders, and  
flame cutters.

<sup>2</sup> Includes bricklayers and stone masons.

<sup>3</sup> Heavy equipment operators, crane and  
derrick operators.

<sup>4</sup> Includes drywall installers and lathers.

<sup>5</sup> Truck drivers.

<sup>6</sup> Construction laborers.

<sup>7</sup> Cleaning service and food service workers.

Source: New Mexico Employment Security  
Department, "New Mexico Occupational  
Manpower Needs to 1985, Revised,"  
November 1980.



Table 3.2.4.2-3. Selected construction labor demand and supply, Texas/New Mexico ROI.

Occupation	Selected M-X Construction Labor Demand (Year) <sup>1</sup>	Projected Bi-State Employment	Projected 24-County ROI Employment	Available ROI Labor Pool <sup>2</sup>	Peak Year Excess Demand <sup>3</sup>	
					Number	Percent
Carpenters	632.5 (1985)	104,450	4,596	460	173	3.8
Electricians	1,385.8 (1986)	48,427	2,131	213	1,173	55.0
Iron workers	1,204.0 (1985)	87,650	3,857	386	818	21.2
Millwrights	133.4 (1986)	4,371	192	19	114	59.4
Cement masons	46.0 (1985)	26,050	1,146	115	--	--
Operating engineers	3,477.3 (1986)	66,440	2,923	292	3,185	109.0
Painters	57.5 (1986)	44,713	1,967	197	--	--
Pipefitters/plumbers	166.8 (1985)	42,275	1,860	186	--	--
Plasterers	0.8 (1986)	49,435	2,175	218	--	--
Teamsters	1,161.0 (1986)	18,160	799	80	1,081	135.3
Tile setters	10.3 (1983)	3,408	150	15	--	--
Laborers	2,519.3 (1985)	83,125	3,658	366	2,153	58.9
Camp and kitchen	2,875.1 (1986)	458,403	20,170	2,017	858	4.3

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<sup>1</sup> Does not include repair and service, clerical/professional, security, overhead, and other miscellaneous crafts; Corps of Engineers (1,506.8 man-years, 1986). Pile drivers included in operating engineers. Track crew and contingency labor requirements allocated over all occupation categories, based upon peak year occupational distribution.

<sup>2</sup> Assumes 10 percent of labor pool available for M-X employment.

<sup>3</sup> Excess demand is craft labor requirements less available ROI labor; percent is excess demand divided by total ROI employment.

Sources: U.S. Air Force, AFRCE/M-X, Task Force for Manpower Requirements "Craft Study," Attachment 6, 19 March 1981, and HDR Sciences, based on information from the Texas Employment Commission and the New Mexico Employment Security Department.

Table 3.2.4.2-4. Estimates of wage escalation due to M-X-related excess peak labor demand, selected construction crafts, Texas/New Mexico, full deployment.

Occupation	Wage Rate <sup>1</sup>	Selected Labor Supply Elasticity Coefficient		
		0.5	1.0	1.5
Carpenters	\$12.85	\$13.83	\$13.34	\$13.18
Electricians	14.87	31.23	23.05	20.32
Iron workers	13.63	19.41	16.52	15.56
Millwrights	12.96	28.14	20.50	17.95
Operating engineers	16.02	50.94	33.48	27.66
Teamsters	12.30	45.58	28.94	23.39
Laborers	9.76	21.26	15.51	13.59
Camp and kitchen	7.55	8.20	7.87	7.77

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<sup>1</sup>FY 1980 dollars from ETR-27, Economic Model.

Source: HDR Sciences.

To a lesser extent carpenters, ironworkers, and camp and kitchen workers would also need to be imported. The number of laborers needed (2,153) would also be significant though some farm laborers would likely be anticipated to cross over into the construction trades. This, however, would still require a replacement labor force in the farm and ranching sectors if major economic dislocation is to be avoided in these sectors.

With substantial excess demand anticipated in the ROI the concurrent pressure on wage inflation would also be strong. Estimated wage rate increases would range from 2.6 percent for carpenters (assuming a labor elasticity of 1.5) to 270 percent increase for teamsters (assuming a labor elasticity of 0.5). Operating engineer wage rates could increase by as much as 218 percent, with lesser impact to be felt in the remaining trades.

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